MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

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Yours truly,

J. T. Munroe.

TRANSACTIONS

OF THE

MEDICAL SOCIETY

OF THE

STATE OF NORTH CAROLINA

SIXTIETH ANNUAL MEETING

HELD AT

Morehead City, N. C.,
June 17, 18, 19, 1913

President Dr. J. P. MUNROE, Charlotte
Secretary Dr. JNO. A. FERRELL, Raleigh

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RALEIGH
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1913

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Dr. J. Howell Way.....Waynesville

"It is understood that the Society is not to be considered as endorsing all the views and opinions of authors of papers published in the Transactions of the Society."—*Extract from By-laws, chapter 10, section 8.*

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ROSTER OF OFFICERS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA FROM ORGANIZATION TO 1913.

*Missing Data Not to be Found in Records.

	Date	Place	Members in Attendance	President	Vice-Presidents	Secretary	Treasurer	Members on Roll*	Honorary Members*	Honorary Fellows*
	1849	Raleigh	25	F. J. Hill		W. H. McKee		25		
1	1850	Raleigh	21	Edmund Strudwick	F. J. Haywood, C. E. Johnson, J. W. Williamson, W. G. Thomas.	W. H. McKee	W. G. Hill	38	9	
2	1851	Raleigh	23	Edmund Strudwick	C. E. Johnson	W. H. McKee	W. G. Hill	46	9	
3	1852	Wilmington	38	J. E. Williamson	Thomas N. Cameron, William G. Hill, Johnston B. Jones, N. J. Pittman.	E. B. Haywood	J. J. W. Tucker	72	12	
4	1853	Fayetteville	24	J. E. Williamson	Wm. G. Hill, Johnston B. Jones, J. B. G. Myers, N. J. Pittman.	W. W. Harris	Daniel Dupree	80	14	
5	1854	Raleigh	37	J. H. Dickson	N. J. Pittman, J. B. G. Myers, J. Graham Tull, A. D. McLean.	S. S. Satchwell	Daniel Dupree	84	17	
6	1855	Salisbury	23	J. H. Dickson	J. Graham Tull, Owen Hadley, A. D. McLean, Hugh Kelly.	S. S. Satchwell	J. B. Dunn	96	18	
7	1856	Raleigh	35	C. E. Johnson	Marcellus Whitehead, E. R. Gibson, Johnston B. Jones, O. F. Manson.	S. S. Satchwell	J. B. Dunn	101	22	
8	1857	Edenton	25	C. E. Johnson	Marcellus Whitehead, O. F. Manson, H. W. Faison, E. T. Gibson.	W. G. Thomas	J. B. Dunn	113	16	
9	1858	New Bern	69	W. H. McKee	Edward Warren, C. W. Graham, Caleb Winslow, A. B. Pierce.	W. G. Thomas	J. B. Dunn	172	18	
10	1859	Statesville	81	W. H. McKee	James G. Ramsey, P. E. Hines, J. R. Mercer, W. T. Howard.	W. G. Thomas	C. W. Graham			
11	1860	Washington	64	N. J. Pittman	P. T. Henry, R. H. Winborne, M. Whitehead, T. S. Leach.	W. G. Thomas	C. W. Graham	233	18	
12	1861	Morganton	23	N. J. Pittman	J. J. Summerell, C. T. Murphy, G. W. Hodges, W. A. B. Norcom.	W. G. Thomas	C. W. Graham	244	18	
13	1866	Raleigh	20	J. J. Summerell		W. G. Thomas	C. W. Graham			
14	1867	Tarboro	41	W. G. Thomas	E. Burke Haywood, R. H. Winborne, W. L. Barrow, J. W. Jones.	S. S. Satchwell	C. W. Graham	288	11	
15	1868	Warrenton	27	S. S. Satchwell	Hugh Kelly, George E. Foote, Charles J. O'Hagan, J. H. Baker.	Thomas F. Wood	J. W. Jones			
16	1869	Salisbury	36	E. Burke Haywood	Thos. E. Wilson, A. B. Pierce, C. T. Murphy, M. A. Locke.	Thomas F. Wood	J. W. Jones			
17	1870	Wilmington	38	C. J. O'Hagan	E. A. Anderson, F. N. Lucky, W. R. Sharpe, R. L. Payne.	Thomas F. Wood	J. W. Jones			
18	1871	Raleigh	35	Hugh Kelly	D. N. Patterson, R. C. Pearson, J. B. Seaby, G. L. Kirby.	Thomas F. Wood	J. W. Jones			
19	1872	New Bern	34	W. G. Hill	H. W. Faison, R. I. Hicks, G. H. Macon, W. A. B. Norcom.	James McKee	J. W. Jones			
20	1873	Statesville	43	M. Whitehead	W. T. Ennett, William Little, Chas. Duffy, T. P. Jerman.	James McKee	H. T. Bahnson			
21	1874	Charlotte	56	W. A. B. Norcom	J. B. Jones, R. F. Lewis, C. G. Cox, J. L. Knight.	James McKee	H. T. Bahnson			
22	1875	Wilson	60	J. W. Jones	Walter Debnam, J. A. Gibson, Wm. Little, D. N. Patterson.	James McKee	H. T. Bahnson	148	5	

23	1876	Fayetteville	33	Peter E. Hines	J. H. Baker, G. G. Smith, T. D. Haigh, J. K. Hall.	James McKee	H. T. Bahnson	157	4	----
24	1877	Salem	42	George A. Foote	J. K. Hall, B. W. Robinson, A. Holmes, A. A. Hill.	James McKee	A. G. Carr	177	4	----
25	1878	Goldsboro	79	R. L. Payne	E. M. Rountree, Richard Anderson, S. B. Flowers, L. A. Stith.	L. J. Picot	A. G. Carr	194	6	----
26	1879	Greensboro	109	Charles Duffy, Jr.	J. A. Gibson, Willis Alston, Jas. McKee, A. A. Hill.	L. J. Picot	A. G. Carr	198	6	----
27	1880	Wilmington	105	J. F. Shaffner	J. K. Hall, W. C. McDuffie, W. R. Wilson, R. F. Lewis.	L. J. Picot	A. G. Carr	225	6	----
28	1881	Asheville	92	R. B. Haywood	J. E. McRee, W. H. Lilly, R. H. Speight, W. J. H. Bellamy.	L. J. Picot	A. G. Carr	254	6	----
29	1882	Concord	65	Thomas F. Wood	T. J. Moore, D. J. Cain, S. E. Evans, John McDonald.	L. J. Picot	A. G. Carr	297	7	----
30	1883	Tarboro	112	J. K. Hall	A. W. Knox, J. M. Hadley, E. S. Foster, John Whitehead.	L. J. Picot	A. G. Carr	310	7	----
31	1884	Raleigh	112	A. B. Pierce	F. W. Potter, G. W. Graham, R Dillard, G. W. Long.	L. J. Picot	A. G. Carr	348	7	----
32	1885	Durham	173	W. C. McDuffie	James McKee, T. E. Anderson, W. H. Whitehead, A. G. Carr.	W. C. Murphy	R. L. Payne, Jr.	424	6	----
33	1886	New Bern	113	Joseph Graham	H. T. Bahnson, L. J. Picot, J. L. McMillan, W. W. Faison.	J. M. Baker	R. L. Payne, Jr.	438	7	----
34	1887	Charlotte	112	H. T. Bahnson	G. G. Smith, J. L. Nicholson, C. M. Poole, H. B. Ferguson.	J. M. Baker	R. L. Payne, Jr.	452	7	----
35	1888	Fayetteville	133	T. D. Haigh	W. P. Ennett, J. A. Dunn, T. E. Anderson	J. M. Baker	C. M. Poole	306	6	----
36	1889	Elizabeth City	50	W. T. Ennett	W. J. Jones, S. W. Stevenson, G. W. Long	J. M. Baker	C. M. Poole	410	6	----
37	1890	Oxford	160	G. G. Thomas	R. L. Payne, Jr., Richard Dillard, S. W. Booth	J. M. Hays	C. M. Poole	414	6	----
38	1891	Asheville	135	R. H. Lewis	S. W. Battle, J. L. Nicholson, W. H. Lilly	J. M. Hays	C. M. Poole	422	6	----
39	1892	Wilmington	162	W. T. Cheatham	T. S. Burbank, J. W. Long, W. H. H. Cobb, W. D. Hilliard.	J. M. Hays	C. M. Poole	431	6	----
40	1893	Raleigh	221	J. W. McNeill	W. G. Galloway, H. H. Harris, J. M. Hadley, Thomas Hill.	R. D. Jewett	M. P. Perry	447	5	3
41	1894	Greensboro	166	W. H. H. Cobb	J. A. Hodge, R. W. Tate, Willis Alston, M. H. Fletcher.	R. D. Jewett	M. P. Perry	454	5	3
42	1895	Goldsboro	------	J. H. Tucker	J. Howell Way, W. H. Harrell, O. McMullan, C. A. Misenheimer.	R. D. Jewett	M. P. Perry	436	7	3
43	1896	Winston-Salem	158	R. L. Payne	S. D. Booth, J. P. Munroe, J. A. Borroughs, J. E. Grimsley.	R. D. Jewett	M. P. Perry	452	7	3
44	1897	Morehead City	103	P. L. Murphy	J. C. Walton, A. A. Kent, M. R. Adams, B. L. Long.	R. D. Jewett	M. P. Perry	406	6	3
45	1898	Charlotte	------	Francis Duffy	E. C. Register, A. T. Cotton, J. B. H. Knight, F. H. Russell.	R. D. Jewett	M. P. Perry	437	6	21
46	1899	Asheville	152	L. J. Picot	I. W. Faison, J. W. White, H. H. Dodson, W. C. Brownson.	George W. Pressly	G. T. Sikes	489	6	16
47	1900	Tarboro	115	George W. Long	C. M. Poole, Jas. M. Parrott, T. B. Williams, W. D. Hilliard.	George W. Pressly	G. T. Sikes	482	6	21
48	1901	Durham	186	Julian M. Baker	M. H. Fletcher, C. A. Julian, D. A. Stanton, E. M. Summerell.	George W. Pressly	G. T. Sikes	515	5	18
49	1902	Wilmington	147	Robert S. Young	A. G. Carr, E. D. Dixon-Carroll, I. M. Taylor, J. M. Parrott.	George W. Pressly	G. T. Sikes	546	5	20

ROSTER OF OFFICERS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA—Continued.

*Missing Data Not to be Found in Records.

	Date	Place	Members in Attendance	President	Vice-Presidents	Secretary	Treasurer	Members on Roll*	Honorary Members*	Honorary Fellows*
50	1903	Hot Springs	155	A. W. Knox	E. G. Moore, C. A. Julian, W. W. McKenzie, J. L. Nicholson.	J. Howell Way	G. T. Sikes	530	6	19
51	1904	Raleigh	326	H. B. Weaver	John Hay Williams, John C. Rodman, S. F. Pfohl.	J. Howell Way	G. T. Sikes	1033	8	17
52	1905	Greensboro	361	David T. Tayloe	C. A. Julian, John T. Burrus, I. W. Faison,	J. Howell Way	G. T. Sikes	1175	8	17
53	1906	Charlotte	406	Edward C. Register	L. B. McBrayer, W. H. H. Cobb, Jr., W. O. Spencer.	J. Howell Way	G. T. Sikes	1234	8	16
54	1907	Morehead City	217	Samuel D. Booth	C. M. Strong, J. E. McLoughlin, W. F. Hargrave.	David A. Stanton	H. McKee Tucker	888	7	16
55	1908	Winston-Salem	372	J. Howell Way	J. E. Stokes, J. A. Turner, W. H. Dixon	David A. Stanton	H. McKee Tucker	998	7	28
56	1909	Asheville	337	J. F. Highsmith	C. M. Poole, D. A. Garrison, D. O. Dees	David A. Stanton	H. McKee Tucker	1067	7	25
57	1910	WrightsvilleB'ch	276	E. J. Wood	John Q. Myers, L. D. Wharton	David A. Stanton	H. D. Walker	1080	8	35
58	1911	Charlotte	412	C. M. Van Poole	J. V. McGougan, W. E. Warren, L. N. Glenn	David A. Stanton	H. D. Walker	880	8	45
59	1912	Hendersonville	296	A. A. Kent	J. P. Monroe, W. P. Horton, J. G. Murphy	David A. Stanton	H. D. Walker	950	8	44
60	1913	Morehead City	232	J. P. Munroe	F. R. Harris, E. S. Bullock, L. B. Morse	Jno. A. Ferrell	H. D. Walker	1133	8	40

PAST MEMBERS BOARD OF MEDICAL EXAMINERS OF THE STATE OF NORTH CAROLINA.

JAMES H. DICKSON, President, Wilmington	1859-1866
Charles E. Johnson, Raleigh	1859-1866
Caleb Winslow, Hertford	1859-1866
Otis F. Manson, Townsville	1859-1866
William H. McKee, Raleigh	1859-1866
Christopher Happoldt, Morganton	1859-1866
J. Graham Tull, New Bern	1859-1866
SAMUEL T. IREDELL, Secretary	1859-1866
N. J. PITTMAN, President, Tarboro	1866-1872
E. Burke Haywood, Raleigh	1866-1872
R. H. Winborne, Edenton	1866-1872
S. S. Satchwell, Rocky Mount	1866-1872
J. J. Summerell, Salisbury	1866-1872
R. B. Haywood, Raleigh	1866-1872
M. Whitehead, Salisbury	1866-1868
J. F. Shaffner, Salem	1868-1872
WILLIAM LITTLE, Secretary	1866-1872
CHARLES J. O'HAGAN, President, Greenville	1872-1879
W. A. B. Norcom, Edenton	1872-1878
C. Tate Murphy	1872-1878
George A. Foote, Warrenton	1872-1878
J. W. Jones, Tarboro	1872-1878
R. L. Payne, Lexington	1872-1878
CHARLES DUFFY, JR., Secretary, New Bern	1872-1878
P. E. HINES, President, Raleigh	1878-1884
T. D. Haigh, Fayetteville	1878-1884
George L. Kirby, Goldsboro	1878-1884
Thomas F. Wood, Wilmington	1878-1884
Joseph Graham, Charlotte	1878-1884
H. T. BAHNSON, Secretary, Salem	1878-1884
R. H. Lewis, Raleigh	1880-1884
WILLIAM R. WOOD, President, Scotland Neck	1884-1890
A. W. Knox, Raleigh	1884-1890
Francis Duffy, New Bern	1884-1890
P. L. Murphy, Morganton	1884-1890
Willis Alston, Littleton	1884-1890
W. J. BELLAMY, Secretary, Wilmington	1884-1890
J. A. Reagan, Weaverville	1884-1890
R. L. Payne, Jr., Norfolk, Va.	1890-1892
George W. Purefoy, Asheville	1890-1892
George G. Thomas, Wilmington	1890-1894
Robert S. Young, Concord	1890-1894
George W. Long, Graham	1890-1896
W. H. WHITEHEAD, President, Rocky Mount	1890-1896
L. J. PICOT, Secretary, Littleton	1890-1896
JULIAN M. BAKER, President, Tarboro	1892-1898
H. B. Weaver, Asheville	1892-1898
T. S. Burbank, Wilmington	1894-1898
J. M. Hays, Greensboro	1894-1897
D. T. TAYLOE, President, Washington	1896-1902
R. H. Whitehead, Chapel Hill	1896-1897
THOMAS E. ANDERSON, Secretary, Statesville	1896-1900
Kemp P. Battle, Jr., Raleigh	1897-1902
J. HOWELL WAY, Secretary, Waynesville	1897-1902
W. H. H. Cobb, Goldsboro	1898-1902
Albert Anderson, Raleigh	1898-1902
E. C. REGISTER, President, Charlotte	1898-1902
Thomas S. McMullan, Hertford	1900-1902
John C. Walton, Richmond, Va.	1900-1902
GEORGE W. PRESSLY, Secretary, Charlotte	1902-1906
A. A. KENT, President, Lenoir	1902-1908
G. T. SIKES, Secretary, Grissom	1906-1908
CHAS. O'HAGAN LAUGHINGHOUSE, Pres't., Greenville	1902-1908
M. H. FLETCHER, President, Asheville	1902-1908
James M. Parrott, Kinston	1902-1908
J. T. J. Battle, Greensboro	1902-1908
Frank H. Russell, Wilmington	1902-1908

NEXT ANNUAL SESSION AT RALEIGH, JUNE 9, 10, AND 11, 1914.

JOHN BYNUM, President, Winston-Salem, Obstetrics and Gynecology.
JOHN C. RODMAN, Washington, Chemistry and Pediatrics.
BENJ. K. HAYS, Secretary, Oxford, Materia Medica.
LEWIS B. MCBRAYER, Asheville, Surgery.
WM. W. MCKENZIE, Salisbury, Anatomy and Histology.
HENRY H. DODSON, Greensboro, Practice of Medicine.
J. L. NICHOLSON, Richlands, Physiology and Hygiene.

ROSTER OF MEMBERS NORTH CAROLINA STATE BOARD OF HEALTH, FROM ORGANIZATION IN 1877 TO 1913.

Name	Address	Appointed by	Term
S. S. Satchwell, M.D., President	Rocky Point	State Society	1877 to 1878
Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1877 to 1878
Joseph Graham, M.D.	Charlotte	State Society	1877 to 1878
Charles Duffy, Jr., M.D.	New Bern	State Society	1877 to 1878
Peter E. Hines, M.D.	Raleigh	State Society	1877 to 1878
George A. Foote, M.D.	Warrenton	State Society	1877 to 1878
S. S. Satchwell, M.D., President	Rocky Point	State Society	1878 to 1884
Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1878 to 1884
Chas. J. O'Hagan, M.D., President	Greenville	State Society	1878 to 1882
George A. Foote, M.D.	Warrenton	State Society	1878 to 1882
Marcellus Whitehead, M.D.	Salisbury	State Society	1878 to 1880
R. L. Payne, M.D.	Lexington	State Society	1878 to 1880
H. G. Woodfin, M.D.	Franklin	Gov. Z. B. Vance	1878 to 1880
A. R. Ledeux, Chemist	Chapel Hill	Gov. Z. B. Vance	1878 to 1880
William Cain, Civil Engineer	Charlotte	Gov. Z. B Vance	1878 to 1880
R. L. Payne, M.D.	Lexington	State Society	1881 to 1887
Marcellus Whitehead, M.D., Pres.	Salisbury	State Society	1881 to 1884
J. M. Lyle, M.D.	Franklin	Gov. T. J. Jarvis	1881 to 1883
William Cain, Civil Engineer	Charlotte	Gov. T. J. Jarvis	1881 to 1883
W. G. Simmons, Chemist	Wake Forest	Gov. T. J. Jarvis	1881 to 1883
J. W. Jones, M.D., President	Wake Forest	State Society	1883 to 1889
John McDonald, M. D.	Washington	State Society	1883 to 1889
S. H. Lyle, M.D.	Franklin	Gov. T. J. Jarvis	1883 to 1885
W. G. Simmons, Chemist	Wake Forest	Gov. T. J. Jarvis	1883 to 1885
Arthur Winslow, Civil Engineer	Raleigh	Gov. T. J. Jarvis	1883 to 1886
R. H. Lewis, M.D.	Raleigh	State Board	1884 to 1893
Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1885 to 1887
William D. Hillis, M.D.	Asheville	State Society	1885 to 1891
Arthur Winslow, Civil Engineer	Raleigh	Gov. A. M. Scales	1885 to 1891
W. G. Simmons, Chemist	Wake Forest	Gov. A. M. Scales	1885 to 1887
J. H Tucker, M.D.	Henderson	Gov. A. M. Scales	1885 to 1887
R. H. Lewis, M.D., Secretary	Raleigh	State Society	1887 to 1897
H. T. Bahnson, M.D., President	Winston-Salem	State Society	1887 to 1893
Arthur Winslow, Civil Engineer	Raleigh	Gov. A. M. Scales	1887 to 1888
W. G. Simmons, Chemist	Wake Forest	Gov. A. M. Scales	1887 to 1889
J. H. Tucker, M. D.	Henderson	Gov. A. M. Scales	1887 to 1889
J. L. Ludlow, Civil Engineer	Winston	Gov. A. M. Scales	1888 to 1891
J. H. Tucker, M.D.	Henderson	Gov. D. G. Fowle	1889 to 1891
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. D. G. Fowle	1889 to 1891
J. L. Ludlow, Civil Engineer	Winston	Gov. D. G. Fowle	1889 to 1893
J. A. Hodges, M.D.	Fayetteville	State Society	1889 to 1892
J. M. Baker, M.D.	Tarboro	State Society	1889 to 1893
J. H. Tucker, M.D.	Henderson	Gov. T. M. Holt	1891 to 1893
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. T. M. Holt	1891 to 1893
J. L. Ludlow, Civil Engineer	Winston	Gov. T. M. Holt	1891 to 1892
*Thomas F. Wood, M.D., Secretary	Wilmington	State Society	1891 to 1897
George G. Thomas, M.D., Pres.	Wilmington	State Board Health	1892 to 1897
S. Westray Battle, M.D.	Asheville	State Society	1891 to 1895
W. H. Harrell, M.D.	Williamston	State Society	1892 to 1895
John Whitehead, M.D.	Salisbury	State Board Health	1893 to 1895
W. H. G. Lucas	White Hall	Gov. Elias Carr	1893 to 1895
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. Elias Carr	1893 to 1895
John C. Chase, Civil Engineer	Wilmington	Gov. Elias Carr	1893 to 1895
R. H. Lewis, M.D., Secretary	Raleigh	Gov. Elias Carr	1893 to 1895
W. P. Beall, M.D.	Greensboro	Gov. Elias Carr	1894 to 1897
W. J. Lumsden, M.D.	Elizabeth City	Gov. Elias Carr	1895 to 1897
John Whitehead, M.D.	Salisbury	State Society	1895 to 1897
W. H. Harrell, M.D.	Williamston	State Society	1895 to 1897
W. P. Beall, M.D.	Greensboro	Gov. Elias Carr	1895 to 1897
R. H. Lewis, M.D., Secretary	Raleigh	Gov. Elias Carr	1895 to 1897
F. P. Venable, Ph.D., Chemist	Chapel Hill	Gov. Elias Carr	1895 to 1897
John C. Chase, Civil Engineer	Wilmington	Gov. Elias Carr	1895 to 1897
C. J. O'Hagan, M.D.	Greenville	Gov. D. L. Russell	1897 to 1899
John D. Spicer, M.D.	Goldsboro	Gov. D. L. Russell	1897 to 1899
J. L. Nicholson, M.D.	Richlands	Gov. D. L. Russell	1897 to 1899
R. H. Lewis, M.D., Secretary	Raleigh	Gov. D. L. Russell	1897 to 1899
A. W. Shaffer, Sanitary Engineer	Raleigh	Gov. D. L. Russell	1897 to 1899
Charles J. O'Hagan, M. D.	Greenville	Gov. D. L. Russell	1899 to 1901
J. L. Nicholson, M.D.	Richlands	Gov. D. L. Russell	1899 to 1901
Albert Anderson, M. D.	Wilson	Gov. D. L. Russell	1899 to 1901
R. H. Lewis, M.D., Secretary	Raleigh	Gov. D. L. Russell	1899 to 1901
A. W. Shaffer, Civil Engineer	Raleigh	Gov. D. L. Russell	1899 to 1901
George G. Thomas, M.D., President	Wilmington	State Society	1899 to 1901
S. Westray Battle, M.D.	Asheville	State Society	1899 to 1901
H. W. Lewis, M.D.	Jackson	State Society	1899 to 1901
H. H. Dodson, M.D.	Milton	State Society	1899 to 1901

*Died in 1892, leaving a five-year unexpired term, which was filled by the Board.

Name	Address	Appointed by	Term
R. H. Lewis, M.D., Secretary	Raleigh	Gov. C. B. Aycock	1901 to 1907
W. P. Ivey, M.D.	Lenoir	Gov. C. B. Aycock	1901 to 1907
George G. Thomas, M.D., President	Wilmington	Gov. C. B. Aycock	1901 to 1905
Francis Duffy, M.D.	New Bern	Gov. C. B. Aycock	1901 to 1905
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1901 to 1905
S. Westray Battle, M.D.	Asheville	State Society	1901 to 1907
H. W. Lewis, M.D.	Northampton	State Society	1901 to 1907
W. H. Whitehead, M.D.	Rocky Mount	State Society	1901 to 1905
J. L. Nicholson, M.D.	Richlands	State Society	1901 to 1905
J. L. Ludlow, Civil Engineer	Winston	Gov. C. B. Aycock	1903 to 1909
J. Howell Way, M.D.	Waynesville	Gov. R. B. Glenn	1905 to 1911
W. O. Spencer, M.D.	Winston	Gov. R. B. Glenn	1905 to 1911
George G. Thomas, M.D., President	Wilmington	State Society	1905 to 1911
Thomas E. Anderson, M.D.	Statesville	State Society	1905 to 1911
R. H. Lewis, M.D.	Raleigh	Gov. R. B. Glenn	1907 to 1913
E. C. Register, M.D.	Charlotte	Gov. R. B. Glenn	1907 to 1913
David T. Tayloe, M.D.	Washington	State Society	1907 to 1913
*Jas. A. Burroughs, M.D.	Asheville	State Society	1907 to 1909
J. E. Ashcraft, M.D.	Monroe	State Board Health	1909 to 1913
J. L. Ludlow, Civil Engineer	Winston-Salem	Gov. W. W. Kitchin	1909 to 1915
J. Howell Way, M.D., President	Waynesville	Gov. W. W. Kitchin	1911 to 1917
W. O. Spencer, M.D.	Winston-Salem	Gov. W. W. Kitchin	1911 to 1917
Thos. E. Anderson, M.D.	Statesville	State Society	1911 to 1917
Chas. J. O'H. Laughinghouse, M.D.	Greenville	State Society	1911 to 1917
Richard H. Lewis, M.D.	Raleigh	Gov. Locke Craig	1913 to 1919
Edw. J. Wood, M.D.	Wilmington	Gov. Locke Craig	1913 to 1919
A. A. Kent, M.D.	Lenoir	State Society	1913 to 1919
Cyrus Thompson, M.D.	Jacksonville	State Society	1913 to 1919

* Died leaving unexpired term.

STATUS OF SOCIETY MEMBERSHIP BY COUNTIES FOR YEARS 1906-1913

Counties	1906	1907	1908	1909	1910	1911	1912	1913
Alamance	15	7	17	15	14	12	11	11
Alexander *a*	----	----	----	----	----	----	----	----
Alleghany	----	----	----	----	----	----	----	----
Anson	3	1	3	1	1	1	6	8
Ashe	----	----	----	----	1	----	----	----
Avery *b*	----	----	----	----	----	----	----	----
Beaufort	10	15	15	11	11	16	15	14
Bertie	3	4	4	4	5	2	2	2
Bladen	4	4	3	3	3	4	4	5
Brunswick	4	4	----	4	2	2	2	5
Buncombe	37	47	48	54	58	63	64	69
Burke	8	10	9	10	13	12	11	13
Cabarrus	13	13	17	16	18	21	21	19
Caldwell	8	10	12	12	13	12	10	12
Camden *c*	----	----	----	----	----	----	----	----
Carteret	9	9	10	7	7	6	7	6
Caswell	3	3	3	2	1	1	1	1
Catawba	8	10	9	12	12	----	----	----
Chatham	----	6	1	2	2	6	----	14
Cherokee	3	----	----	9	6	7	9	8
Chowan-Perquimans	----	----	----	----	----	7	5	8
Clay *d*	----	----	----	----	----	----	----	----
Cleveland	12	14	14	13	13	14	15	15
Columbus	8	9	8	8	8	10	12	12
Craven	8	10	14	14	14	12	14	18
Cumberland	8	12	12	17	20	20	22	23
Currituck	6	6	3	3	6	4	4	4
Dare *e*	----	----	----	----	----	----	----	----
Davidson	11	12	12	12	13	13	15	13
Davie	3	6	6	6	6	5	6	----
Duplin	5	8	8	10	10	9	8	9
Durham	16	15	18	24	26	28	31	32
Edgecombe	4	8	8	10	10	11	11	11
Forsyth	20	21	26	30	25	29	31	32
Franklin	8	10	10	9	11	11	11	10
Gaston	17	22	25	25	27	29	29	30
Gates	4	4	4	----	----	----	----	----
Graham	----	----	----	----	----	----	----	----
Granville	7	8	11	12	12	8	13	12
Greene	4	5	5	6	6	6	5	5
Guilford	39	54	62	64	65	56	58	59
Halifax	9	10	10	7	6	2	2	11
Harnett	13	16	18	19	15	14	17	17
Haywood	7	10	11	15	13	10	11	13
Henderson-Polk	10	11	15	14	14	17	17	11
Hertford	8	8	9	8	6	2	----	8
Hyde	----	----	5	8	6	6	6	7
Iredell-Alexander	19	18	18	18	17	12	9	9
Jackson	5	2	2	----	----	----	----	2
Johnston	9	11	15	13	15	19	18	18
Jones	----	----	----	----	----	----	----	----
Lee	----	----	----	----	----	----	----	7
Lenoir	11	12	13	9	12	6	8	9
Lincoln	7	8	8	10	10	10	11	12
Macon-Clay	3	3	4	5	----	----	----	4
Madison	7	11	11	12	----	----	10	7
Martin	6	9	9	13	13	13	12	13
McDowell	8	7	----	8	4	5	6	6
Mecklenburg	31	37	54	51	57	44	50	63
Mitchell-Avery	----	3	4	7	4	5	5	4
Montgomery	5	6	8	7	9	7	7	8
Moore and Lee	17	2	14	10	11	21	21	13
Nash	----	----	----	----	----	----	1	----
New Hanover	15	20	21	23	21	21	22	31
Northampton	7	9	9	8	11	9	1	12
Onslow	3	4	4	4	6	11	10	12
Orange	1	1	1	1	1	1	1	8
Pamlico	3	3	4	5	4	4	4	5
Pasquotank-Camden-Dare	11	11	10	10	11	12	12	13
Pender	----	----	----	----	2	2	2	2
Perquimans *f*	----	----	----	----	----	----	----	----
Person	6	7	8	9	9	10	11	11
Pitt	11	11	9	14	10	10	5	9
Polk *g*	----	----	----	----	----	----	----	----
Randolph	6	6	9	9	10	8	9	7
Richmond	11	11	11	1	12	1	10	----
Robeson	16	24	24	20	15	22	23	35
Rockingham	2	5	5	1	16	16	16	18
Rowan	19	27	25	23	24	26	24	23
Rutherford	15	16	17	22	23	24	18	19
Sampson	7	9	11	10	11	11	12	12
Scotland	7	8	11	10	11	9	9	11
Stanly	9	9	9	8	11	10	11	11
Stokes	11	5	10	11	9	10	11	7
Surry	10	13	15	15	15	13	14	19
Swain	6	6	6	8	----	----	----	----
Transylvania	8	4	4	1	----	5	5	6
Tyrrell *h*	----	----	----	----	----	----	----	----
Union	9	14	14	14	14	15	16	17
Vance	6	6	8	9	12	11	11	11
Wake	39	42	44	49	53	56	54	41
Warren	----	----	2	----	----	4	5	5
Washington-Tyrrell	3	4	5	10	11	11	11	11
Watauga	----	----	----	----	----	----	----	----
Wayne	10	10	13	10	----	----	16	19
Wilkes	6	7	8	8	11	11	6	9
Wilson	10	12	12	16	17	17	17	17
Yadkin	9	10	11	8	6	6	6	7
Yancey	2	----	4	3	----	----	----	----
Totals	769	865	979	1012	997	996	1036	1133

a See Iredell; *b* see Mitchell; *c* see Pasquotank; *d* see Macon; *e* see Pasquotank; *f* see Chowan; *g* see Henderson; *h* see Washington.

HONORARY FELLOWS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

H. T. Bahnson ..... Winston-Salem
W. J. Love ..... Wilmington
W. I. Royster ..... Raleigh
George G. Thomas ..... Wilmington
*Francis Duffy ..... New Bern
*F. J. Haywood ..... Raleigh
Geo. W. Long ..... Graham
R. H. Speight ..... Whitakers
R. J. Noble ..... Selma
D. W. Bullock ..... Wilmington
L. H. Hill ..... Germantown
L. J. Picot ..... Raleigh
R. H. Lewis ..... Raleigh
I. W. Faison ..... Charlotte
C. E. Moore ..... Wilson
Henry Tull ..... Kinston
J. W. McNeill ..... Fayetteville
W. P. Beall ..... Greensboro
T. E. Anderson ..... Statesville
R. H. Hargrove ..... Robersonville
C. M. Van Poole ..... Salisbury
H. T. Trantham ..... Salisbury
D. M. Prince ..... Laurinburg
A. W. Knox ..... Raleigh
J. M. Baker ..... Tarboro
J. L. Nicholson ..... Richlands
T. T. Misenheimer ..... Morven
M. H. Fletcher ..... Asheville
H. Bascom Weaver ..... Asheville
Jno. Hey Williams ..... Asheville
Willard P. Whittington ..... Asheville
T. F. Pharr ..... Concord
*Robt. S. Young ..... Concord
*L. M. Archey ..... Concord
A. R. Wilson ..... Greensboro
L. W. Hunter ..... Sardis
Jno. R. Irwin ..... Charlotte
C. A. Misenheimer ..... Charlotte
W. C. Galloway ..... Wilmington
Richard Dillard ..... Edenton
J. D. McMillan ..... Edenton
John Whitehead ..... Salisbury
Kemp P. Battle, Jr. ..... Raleigh
Roger A. Smith ..... Goldsboro

*Deceased.

HONORARY MEMBERS, MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

L. McL. Tiffany ..... Baltimore, Md.
W. W. Keen ..... Philadelphia, Pa.
J. Allison Hodges ..... Richmond, Va.
R. L. Payne ..... Norfolk, Va.
J. N. McCormack ..... Bowling Green, Ky.
J. C. Walton ..... Richmond, Va.
R. L. Payne, Jr. ..... Norfolk, Va.
J. L. Ludlow, C. E. ..... Winston-Salem

OFFICERS FOR 1912-1913.

President—Dr. J. P. Munroe ..... Charlotte
First Vice-President—Dr. Fletcher R. Harris ..... Henderson
Second Vice-President—Dr. E. S. Bullock ..... Wilmington
Third Vice-President—Dr. L. B. Morse ..... Hendersonville
Secretary—Dr. Jno. A. Ferrell ..... Raleigh
Treasurer—Dr. H. D. Walker ..... Elizabeth City
Orator—Dr. H. D. Stewart ..... Monroe
Essayist—Dr. J. T. Burrus ..... High Point
Leader of Debate—Dr. J. H. Harper ..... Snow Hill

COUNCILORS, 1913.

First District—Dr. J. L. Spruill ..... Columbia
Second District—Dr. K. P. B. Bonner ..... Morehead City
Third District—Dr. G. L. Sikes ..... Salemburg
Fourth District—Dr. M. M. Saliba ..... Wilson
Fifth District—Dr. W. P. Holt ..... Duke
Sixth District—Dr. R. L. Felts ..... Durham
Seventh District—Dr. A. J. Crowell ..... Charlotte
Eighth District—Dr. R. O. Dees ..... Greensboro
Ninth District—Dr. D. J. Hill ..... Lexington
Tenth District—Dr. M. L. Stevens ..... Asheville

HONORARY FELLOWS.

The following list of names was reported by the secretaries for Honorary Fellowships, but as the matter did not come up in the House of Delegates no action was taken:

R. A. Freeman ..... Alamance County
J. A. Harris ..... Buncombe County
Isaac M. Taylor ..... Burke County
C. Duffy ..... Craven County
N. M. Johnson ..... Durham County
J. F. Shaffner ..... Forsyth County
W. W. Denny ..... Lenoir County
W. J. Bellamy ..... New Hanover County

W. Hall ..... New Hanover County
J. T. Schoenwald ..... New Hanover County
W. D. McMillan ..... New Hanover County
A. D. McDonald ..... New Hanover County
E. M. Summerell ..... Rowan County
W. W. Faison ..... Wayne County

OFFICERS FOR 1913-1914.

President—Dr. James M. Parrott ..... Kinston
First Vice-President—Dr. E. T. Dickinson ..... Wilson
Second Vice-President—Dr. J. T. J. Battle ..... Greensboro
Third Vice-President—Dr. E. Sevier ..... Asheville
Secretary—Dr. Jno. A. Ferrell ..... Raleigh
Treasurer—Dr. H. D. Walker ..... Elizabeth City
Orator—Dr. John R. Irwin ..... Charlotte
Essayist—Dr. A. S. Pendleton ..... Raleigh
Leader in Debate—Dr. D. S. George ..... Marshallberg

COUNCILORS, 1913-1916.

Chairman—Dr. M. L. Stevens ..... Asheville
Secretary—Dr. K. P. B. Bonner ..... Morehead City
First District—Dr. J. L. Spruill ..... Columbia
Second District—Dr. K. P. B. Bonner ..... Morehead City
Third District—Dr. L. B. Evans ..... Clarkton
Fourth District—Dr. M. M. Saliba ..... Wilson
Fifth District—Dr. Peter John ..... Laurinburg
Sixth District—Dr. R. L. Felts ..... Durham
Seventh District—Dr. A. J. Crowell ..... Charlotte
Eighth District—Dr. W. M. Jones ..... Greensboro
Ninth District—Dr. D. J. Hill ..... Lexington
Tenth District—Dr. M. L. Stevens ..... Asheville

For names of delegates and committees, see page 241, in the minutes of the House of Delegates.

CHAIRMEN OF SECTIONS, 1914.

Surgery and Anatomy:
Chairman—Dr. Chas. T. Harper ..... Wilmington
Assistant Chairman for Anatomy—Dr. J. L. Nicholson ..... Washington
Materia Medica and Therapeutics and Pediatrics:
Chairman—Dr. Jno. Hey Williams ..... Asheville
Assistant Chairman for Pediatrics—Dr. A. W. Callaway ..... Asheville
Practice of Medicine:
Chairman—Dr. I. M. Taylor ..... Morganton
Physiology and Chemistry:
Chairman—Dr. J. W. Halford ..... Chalybeate Springs
Obstetrics:
Chairman—Dr. K. G. Averitt ..... Cedar Creek

Gynecology:
Chairman—Dr. W. B. Murphy.....Snow Hill
Medical Jurisprudence and State Medicine:
Chairman—Dr. J. T. J. Battle.....Greensboro
Pathology and Microscopy:
Chairman—Dr. J. B. Powers, Jr.....Wake Forest College
Railway Surgery:
Chairman—Dr. B. R. Graham.....Wallace

PROGRAM

SIXTIETH ANNUAL MEETING, 1913.

First Day, Tuesday, June 17—10:30 a. m., Ballroom.

Call to Order—Dr. J. P. Munroe, President.
Invocation—Rev. Euclid McWhorter.
Address of Welcome in Behalf of City—Mayor W. M. Webb.
Address of Welcome in Behalf of Carteret County Medical Society—Dr. David S. George.
Response in Behalf of Society—Dr. Albert Anderson.
President's Annual Address—Dr. J. P. Munroe.
Report of Committee on Arrangements.
Report of Special Committees.
Announcements:
House of Delegates, 2 p. m.
Board of Councilors.

Tuesday Afternoon—3 o'clock.

PHYSIOLOGY AND CHEMISTRY.

DR. I. H. MANNING, CHAIRMAN, CHAPEL HILL.

Physiology and the Practice of Medicine—Dr. I. H. Manning, Chapel Hill.
Why is a Laboratory and When?—Dr. A. S. Pendleton, Raleigh.
Unannounced—Dr. William T. Carstarphen, Wake Forest.
Blood Pressure as It Concerns the General Practitioner—Dr. Louis G. Beall, Greensboro.

EYE, EAR, NOSE, AND THROAT.

DR. J. G. MURPHY, CHAIRMAN, WILMINGTON.

Paralysis of One of the Extraocular Muscles—Dr. J. G. Murphy, Wilmington.
Neurosis—Dr. Thomas W. Davis, Winston.
Removal of Tonsils—Dr. Joel Whitaker, Raleigh.
Eye Work as It is Done for the Man in General Practice—Dr. John Hill Tucker, Charlotte.
Nasal Surgery with New Instrument—Dr. W. Perry Reaves, Greensboro.

TUESDAY NIGHT—8:30 o'clock.

Address—Governor Locke Craig.

The Diagnosis and Treatment of Hypothyroidism—Dr. Stuart McGuire, Richmond, Va.

The Conservation of Nerve and Mental Health—Dr. J. Allison Hodges, Richmond, Va.

A Demonstration of the X-ray Diagnosis of Phthisis or Central Tuberculosis—Dr. W. O. Witherbee, Charlotte.

Ophthalmia Neonatorum—Mr. John E. Ray, Superintendent State Blind School, Raleigh.

Feeble Mindedness (Illustrated)—Dr. Ira M. Hardy, Superintendent State School for the Feeble Minded, Kinston.

SECOND DAY, WEDNESDAY MORNING—9 o'clock.

PRACTICE OF MEDICINE.

DR. J. F. PATTERSON, CHAIRMAN, NEW BERN.

Cerebral Malaria—Dr. J. F. Patterson, New Bern.

Hemorrhagic Fever—Dr. Cyrus Thompson, Jacksonville.

Hemorrhagic Fever—Dr. F. L. Brown, Scott's Hill.

Hemorrhagic Fever—Dr. G. E. Kornegay, Kinston.

Prophylactic Vaccination Against the Diarrheal Diseases of Infancy—A Preliminary Report Based on Animal Experimentation—Dr. E. J. Wood, Wilmington.

Diseases Due to Faulty Nutrition, with Especial Reference to Ileocolitis—Dr. Guy Smith Kirby, Marion.

Water Compared with Other Agencies in the Spread of Typhoid Fever—Dr. C. A. Shore, Raleigh.

Effect of Different Anesthetics on the Pathology of the Kidney and on the Output of Urine in Experimental Nephritis—William de B. MacNider, Chapel Hill.

Functional Tests for Nephritis—Dr. Hubert Haywood, Raleigh.

Fallacies Concerning Insanity—Dr. Paul Anderson, Richmond.

Unannounced—Dr. A. D. Parrott, Kinston.

Pellagra—Dr. K. G. Averitt, Cedar Creek.

Diagnosis and Treatment of Pellagra—Dr. E. H. Bowling, Durham.

Alcoholism—Dr. C. W. Ashworth, Greensboro.

CONJOINT SESSION

WEDNESDAY, JUNE 18—12 o'clock.

Conjoint session of Medical Society of State of North Carolina and the North Carolina State Board of Health.

MEMBERS STATE BOARD OF HEALTH:

J. Howell Way, M.D., President.....Waynesville
Richard H. Lewis, M.D.....Raleigh
Edward C. Register, M.D.....Charlotte
J. E. Ashcraft, M.D.....Monroe

David T. Tayloe, M.D. ..... Washington
J. L. Ludlow, C.E. ..... Winston-Salem
W. O. Spencer, M.D. ..... Winston-Salem
Thomas E. Anderson, M.D. ..... Statesville
Charles O'H. Laughinghouse, M.D. ..... Greenville

ORDER OF BUSINESS.

1. Reports of Work Accomplished and Recommendations:
   (*a*) W. S. Rankin, M.D., Secretary and Treasurer to Board.
   (*b*) John A. Ferrell, M.D., Assistant Secretary to Board for Hookworm Disease.
   (*c*) C. A. Shore, M.D., Director State Laboratory Hygiene.
2. Discussions.
3. Election of Officers.
4. New Business.
   Adjournment.

WEDNESDAY AFTERNOON—3 o'clock.

MISCELLANEOUS PAPERS.

The Prevention of the Complications of Gonorrhea—Dr. C. O. Abernethy, Raleigh.

The Advantages of the Perineal Over the Suprapubic Prostatectomy—Dr. A. J. Crowell, Charlotte.

The Ideal Treatment of Syphilis—Dr. F. D. Austin, Charlotte.

Physiologic Psychology in Relation to Feeblemindedness—Dr. H. O. Hyatt, Kinston.

What State Medicine Stands For—Dr. Paul H. Ringer, Asheville.

OBSTETRICS AND GYNECOLOGY.

DR. A. B. CROOM, CHAIRMAN, MAXTON.

Pelvic Troubles in the Female—Dr. A. B. Croom, Maxton.

Reflex Vomiting in Uterine Displacements—Dr. T. Marshall West, Fayetteville.

Radical and Conservative Management of Some Obstetric Problems in General Practice—Dr. Roscoe D. McMillan, Red Springs.

The Midwife—Dr. J. W. Halford, Lillington.

Report of Cæsarean Section—Dr. K. G. Averitt, Cedar Creek; Dr. J. R. Parker, Goldsboro.

Unannounced—Dr. H. D. Stewart, Monroe.

WEDNESDAY NIGHT—8:30 o'clock.

Report of the Committee on Obituaries—Dr. E. G. Moore, Chairman, Elm City; Dr. A. W. Knox, Raleigh; Dr. M. L. Stevens, Asheville.

Essay: *Our Profession*—Dr. J. T. Burrus, High Point.

Oration: *Mr. Crook*—Dr. H. D. Stewart, Monroe.

THURSDAY MORNING—9 o'clock.

MATERIA MEDICA AND THERAPEUTICS.

DR. M. A. ROYAL, CHAIRMAN, ELKIN.

Thyroidectin and Its Employment in the Treatment of Exophthalmic Goiter—Dr. J. J. Philips, Tarboro.

The Value of Sphygmamonometer to the Therapeutist—Dr. T. L. Ginn, Goldsboro.

ANATOMY AND SURGERY.

Symposium on Surgery of the Alimentary Tract.

DR. HENRY NORRIS, CHAIRMAN, RUTHERFORDTON.

Unannounced—Dr. Henry Norris, Rutherfordton.

Foreign Bodies in the Trachea and Œsophagus, with Report of Case—Dr. L. A. Crowell, Lincolnton.

Diagnosis and Treatment of Chronic Gastric Ulcer—Dr. W. O. Nisbet, Charlotte.

Diseases of the Gall Bladder and Their Surgical Treatment—Dr. J. F. Highsmith, Fayetteville.

Acute Obstructions of the Bowels from a Very Large Gall Stone—Dr. R. L. Gibbon, Charlotte.

Resection of the Intestine—Dr. Joseph Graham, Durham.

Sigmoid Adhesion—Dr. H. A. Royster, Raleigh.

Surgery the Last Resort. The Surgeon's Responsibility in Such Cases—Dr. D. T. Tayloe, Washington.

Management of Abdominal Adhesions—Dr. J. T. Burrus, High Point.

Surgical Pathology of the Lower Right Abdominal Quadrant—Dr. A. G. Brenizer, Charlotte.

Urethrorectal Fistulæ—Dr. A. J. Crowell, Charlotte; Dr. J. W. Squires, Charlotte.

Congenital Pyloric Stenosis, with Report of Case—Dr. Lyle S. Booker, Durham.

Pellagra, Surgery, and the Colloids (One New Factor and a Theory as to Its Cause)—Dr. Harlan Shoemaker, Shelby.

Osteomyelitis—Dr. Eugene B. Glenn, Asheville.

Transactions of the Sixtieth Annual Meeting of the Medical Society of the State of North Carolina

OPENING SESSION

Tuesday, June 17, 1913

Meeting called to order by Dr. K. P. B. Bonner.

INVOCATION.

Rev. Euclid McWhorter.

Oh Lord, our Lord, how excellent is Thy name in all the earth. There is no language where Thy praises do not pour forth telling of Thy graciousness and good gifts. Thou art life and in Thee all things spring and have their incipiency. We thank Thee for what Thou hast done for men in seeking to make us, Thy creatures, happy, to beautify the world, and to fit men for the fullest capacity of enjoyment and of service. We thank Thee for all the blessings which come to human life. We thank Thee that when God was in the flesh He made it one of His chief concerns to look after the wants and sufferings of us, His creatures; that He frequently had mercy upon men's bodies; sought not only to remove inbred sin, but to take away the consciousness and results of actual transgression; sought to patch up broken down chords of human life; to bind together human sentiment and human sympathy. In His service He went about healing the sick and teaching men the elementary principles of sanitation. We thank Thee for this body of men who go out in the name of their Master. Oh, that they may be good men and clean men and serviceable men, and that their professional lives may be such as to command the respect of good people everywhere. And we pray Thee that like Jesus of Nazareth they may do good, not only from a commercial or professional standpoint, but from a sense of duty, and also because they love men's lives. May this gathering be a happy occasion, and may they go back to their homes refreshed and strengthened by their stay here. Bless their homes, and like Luke, the beloved physician, may they minister to the hearts of men, for Jesus sake. Amen.

ADDRESS OF WELCOME IN BEHALF OF MOREHEAD CITY.

R. E. WHITEHURST, CITY ATTORNEY.

Mr. Chairman, Members of the Medical Society of North Carolina, Ladies and Gentlemen:

Due to the absence of my esteemed friend, the Mayor of our city, the honor and the pleasure has devolved upon me to welcome you to the "summer capital" of North Carolina. Certainly a more pleasant duty could be assigned to no one.

You have gathered here from Murphy to Manteo to discuss methods for the alleviation of suffering humanity, a purpose worthy of your best thoughts and endeavors, which should be repaid in gratitude and in coin.

Very often we note the advertisement of various callings stating the hours at which such persons may be found, but who can define the working hours of a physician? It is true of them as has been said of the women:

> "Man's work is from sun to sun,
> But woman's work is never done."

They can not claim the eight-hour day of the union, for twenty-four hours of every physician's day belongs to his patients. It may be in the dead of night, when you are fatigued by an arduous day's labor, the call will come for a divorce from your comfortable bed to face the winter's blast or the summer's storm; there is but one star that guides you at such a time and that is the call of suffering.

Pardon a personal reference, but I claim to be something of a doctor myself, having been associated for a number of years with that prince of the profession, Dr. Charles W. Stiles, and it has been my duty in times past to chase *Necator Americanus* and similar reptiles from their abiding place in potbellied, barefooted boys of our Southland. From this association I believe I have grasped in a measure the viewpoint of the profession which stated in a brief way is this: Not only to cure the ills of those around us, but to reach out and prevent the cause before others are subjected to suffering.

No man or class of men work harder against their own financial interests than do the doctors, and no class is so free from the spirit of commerce.

Gentlemen, as individuals we welcome you, also collectively as the Medical Society of North Carolina we tender you a hearty welcome.

As I take it the purpose of your Association is twofold: the exchange

of ideas and the promotion of harmony among yourselves. The oft quoted adage, "An ounce of prevention is worth a pound of cure" is coming to be more and more the motto of your Society. In this age of progress no profession, not excepting our Bull Moose friends, has shown such healthy advancement as has the followers of Æsculapius. Every branch of your profession has been revolutionized within the last decade. It is to keep pace with this advancement and to render unto those who seek your care the most efficient service that you come together at these annual meetings.

One fact which is worthy of mention is the interest which associations such as this have aroused in the lay mind by use of current and special literature. A well informed layman knows the difference between diseases due to filth and those due to other causes, and there is fast awakening in the popular mind a sense of shame in knowing that filth disease exists in a community. This is one of the best indications that your efforts are appreciated.

Your purpose in meeting is most worthy, "It is good for you to be here. Let us build three tabernacles: one to the love of old North Carolina; one to public service; one to the profession and its posterity."

We love to have you here and the doors of our hearts and homes are open with the word "Welcome" in capital letters inscribed above. We believe and trust that you will enjoy your stay among us and hope that you will derive both pleasure and profit from your visit.

Again, in the name of Morehead City, I bid you welcome.

ADDRESS OF WELCOME IN BEHALF OF CARTERET COUNTY MEDICAL SOCIETY.

David S. George, M.D.

Gentlemen of the North Carolina Medical Society:

I received a letter from Dr. Bonner the other day stating that I was on the program for a speech today, and it is only a sense of duty which has prompted me to be here today.

I want to speak to you for a few moments in regard to the appreciation of men from the standpoint of what they do. If we rate men according to the work done; according to the alleviation of suffering; according to the thousands and tens of thousands of lives saved, in accordance with the great progress achieved, the medical profession easily stands ahead of them all. A few years ago you remember that some the diseases that were dreaded are now thought of as things almost of

the past. You remember the time when puerperal infection was feared as the plague. Men were afraid of it and women very much frightened because of this malady. Now the younger men in the profession and the people in the country know very little about it save in the outlying districts where women are in the hands of those unlearned. We all remember when the clutches of diphtheria were very much like a plague, and from thirty to forty per cent afflicted with this trouble were delivered to the grave. How is it today? With the proper use of antitoxin in large doses reaching the case in time the death rate is almost *nil.*

I want to say just here to the State Board of Health of North Carolina that we, the practicing physicians of North Carolina, in rank and file want to thank you today for the great work you have done in helping to bring down the price of antitoxin so that the poor man's child can have a chance of life. It is hardly necessary for us to mention a number of these diseases. You remember the campaign in Cuba and in the city of Havana how wonderfully the death rate fell away.

There is just one or two other things we want to mention here and the most important one we want to dwell upon is just this. The greatest advantage, the greatest eye opener, the greatest object lesson that this world has ever seen—written so plainly that men who run may read—is the building of the great Panama Canal. You remember how the French went there and lost their thousands of men until Cemetery Hill today is looked upon as the burying ground of unknown thousands —thousands without grave and without mark. But today under the management of intelligent physicians authorized by the United States Government, health conditions there compare favorably with the larger cities of our own country. Who did it? It was the medical man.

Now gentlemen, I want to say to you in behalf of Carteret County Medical Society that we are very glad this morning to claim kin with you. We would like for you to bear with us just a moment and let us tell you that we are poor folks. Sometimes the well to do do not like to associate with poor folks and those who do not rate well in higher life. Our county has but a few physicians. The city of Morehead can afford but three, the town of Beaufort, or city I should say, just across the stream has four, and out in the country we have a scattered number. But we want to say to you today that we are loyal to the code of ethics of the Medical Society of North Carolina. The distinguished gentlemen before me are doing their practicing in the larger cities and enjoying the beauties of city life, and we in the smaller towns and in the country are doing our very best to cope with you in the high ideals set

before us. We love the profession for the profession's sake, we love the work for the work's sake. We are doing what we can to bring blessings and happiness to the people of Eastern Carolina. We believe wonderfully in the medical profession, and if you will allow us to eliminate one or two men whose names I might call in your presence—such as the great man of tubercular fame who struck our shore—let us eliminate men of that character, and I say that the medical profession in this country stands for the betterment of society more than all others save possibly the ministers.

In behalf of the Medical Society of Carteret County we want to bid you a very hearty welcome. You are among your poor kin, make yourselves very much at home. Use us in any way you see fit. We will run errands for you or do anything to make you happy.

And now to the class of 1913 we want to say you are heartily welcomed in our meetings: join in them, and we hope you will join the North Carolina Medical Society.

RESPONSE TO ADDRESS OF WELCOME.

Albert Anderson, M.D., Raleigh, N. C.

Mr. Chairman, Ladies and Gentlemen, and Fellow Members of the North Carolina Medical Society:

Meeting a personal friend after six years absence, who gives you a warm heart in a glad hand, makes a man feel good, and as both listen at mutual cordial greetings a good feeling grows into joy inexpressible. It has been just six years since we met at this place. We came prepared to enjoy our stay in this city, to which we have just been welcomed by representatives of the city and the profession, which make us feel at home already, and we wish to extend to you and your good people our sincere appreciation of this hearty welcome. We know this is a city of no mean proportions, well known for its great hospitality, a citizenship of cultured men and women, a city which has more children in school than any other in North Carolina in proportion to population: six hundred in school to twenty-five hundred inhabitants. Where we find these conditions we know that hospitality, culture and education, arts and sciences, morality and religion, progress and wealth will be the possessions of such a people. Hence we find here a light and water plant owned and operated by your city government—plenty of light by day and night—and light goes with deeds which are noble; plenty of water both fresh and salt; an ice plant of twenty-five tons daily capacity, and that

is not sufficient for the demands of your city; two banks which have the implicit confidence of your people, whose officers regard the deposits as a sacred trust; and shall we speak of your fish industry? It is the second largest shipping port on the Atlantic seaboard and the fish are like the character of the shippers—the very best—no second place in quality, and here you put more money in your fish fertilizer industry than all the other North Carolina counties combined. It ranks with similar plants on the great Chesapeake Bay. We have read of the great Inland Waterway during recent years until it has become in our minds the greatest possible project of the State for our industrial development. Your connection with this means much for your future prosperity. The four million dollars which the Government appropriated for this waterway and a railroad seeking a terminal at Cape Lookout, a few miles away, will no doubt make this a great commercial city. But don't lose your present Morehead characteristics when your commercial greatness comes.

Look, now, ladies and gentlemen, at yonder magnificent boulevard, a street nearly a mile long and one hundred and twenty feet wide—that is an index of your leaders. When the righteous rule the people rejoice in prosperity. For twelve or fourteen years your chief officer, who led in your magnificent development, was that honorable Christian gentleman, Charles S. Wallace, who was been sent for several consecutive terms to the State Legislature, and as a Mayor so a legislator—always the leader—modest as a woman but as courageous as a lion in the hour of duty. I am reliably informed that his successor, your present Mayor, was made in the same mould. In North Carolina there has been under construction a central highway for the last year or two. This city is the eastern terminal, and in a short time you will find our people from the Capital City and intervening points coming down in autos to spend the weekends to enjoy your seashore. You have a city paper which worthily represents your people, for it is edited by Robert T. Wade, a brother of my friend Stacy, who is all wool and a yard wide.

What I have said of your city I did not know of my own knowledge, and I said to my informant, "Are you not stretching your blanket just a little too much?" He replied with greatest emphasis, "No, sir, there is only one garden spot in North Carolina, where grass grows green the year around, and that is Morehead City." This is the spot where I first saw the ocean, more than three and a half decades ago. As a country boy I came here on an excursion. When the Atlantic first burst upon my vision I was speechless in admiration of its grandeur and sublimity, as I watched its waves break upon the shore in its in-

effable beauty of foam and spray. I then had my first and greatest conception of the power of Him whom the winds and the seas obey, who gave the seas His decree that the water should not pass His commandment. A Power able to rebuke the winds and raging seas into peace and quietness is no doubt the controlling influence in forming the great life of this people, a life measured in depth by high thoughts, in breadth by sympathies worldwide, in height by noble aspirations, and its length is measured not by years but by unselfish deeds.

THE PRESIDENT'S ANNUAL ADDRESS.

J. P. Munroe, M.D., Charlotte, N. C.

Fellow Members of the Medical Society of the State of North Carolina:

Ladies and Gentlemen:—The constitution of the Medical Society of the State of North Carolina, adopted ten years ago, states that "The purpose of the Society shall be to federate and bring into one compact organization the entire medical profession of the State of North Carolina * * * with a view to the extension of medical knowledge and to the advancement of medical science; to the elevation of the standard of medical education and to the enactment and enforcement of just medical laws; to the promotion of friendly intercourse among physicians and to the guarding and fostering of their material interests; and to the enlightment and direction of public opinion in regard to the great problems of State Medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life."

These are noble purposes, and it is entirely proper that we should take brief account of stock, that we should occasionally consider in what ways we have accomplished the purposes herein outlined, and to what extent we have attained the goals sought for.

It is not the purpose of the speaker to enter into a full discussion of the merits or demerits of the new plan of organization adopted at Hot Springs ten years ago. He wishes rather to point out some of the advantages that have accrued, some of the results that have been attained and, if possible, to inspire this organization and its component members with more zeal for future work, higher ambitions for scientific achievements, and nobler aspirations for professional unity.

One very decided improvement of the present plan of organization over the old was the division of the State into Councilor Districts, and

the election of a councilor for each district who is an officer of the Society. It is no unimportant feature of this plan that the councilor is elected for a term of three years rather than one year, as is the case with your President. By reason of this the councilor is enabled to familiarize himself with the needs of the profession throughout his district, to visit and advise with the various county societies, to help organize such societies where none exist, and to bring these together into the formation of district societies.

My observation has been that your councilors have been a very important factor in stimulating the growth and efficiency of the county society. Moreover, the district societies, wherever formed, have proven of great educational value and have, to a certain extent, taken the place of postgraduate schools in their respective localities.

I wish especially to emphasize the good work that has been done in several counties, and more particularly in the district meetings in the way of clinical demonstrations. This kind of work should be encouraged, and I would like to urge every county society and every district to promote as far as possible clinical work in their meetings. There is scarcely a district in the State that does not afford facilities, some of them unusual facilities, with good operating rooms for surgical demonstrations and commodious halls for the presentation of medical, clinical and interesting pathological specimens.

It is a matter of history that the first impetus given to American physicians and surgeons in the study and treatment of myxœdema originated in the clinical demonstration given by Dr. Ord and others in a clinical congress in London in 1881.

Another important feature that has resulted from the reorganization of the Society referred to is that at these meetings more time is devoted to the presentation and discussion of scientific matters, and that those preparing papers and reports bearing on their work and investigations have a fuller opportunity of presenting them to their professional brethren without a fear of having them crowded out by overdue attention to business matters or semi-political considerations brought before the Society.

Indeed the interest in scientific matters has become so great that a rather new and unexpected status of affairs has arisen, in that it is sometimes difficult to find sufficient time for the medical and surgical papers to be read during the session of our Society. It is not an easy matter for those who arrange a program to fit exactly the hours during which we are scheduled to convene. Sometimes a number of papers are placed upon the program and the authors fail to appear, thus leaving a

vacancy for that particular time. Again, papers of unusual interest are presented which provoke an unexpected amount of discussion, and then the time appears too short for the program as arranged. Then, too, the very excellent rule limiting papers and discussions is occasionally abrogated by the will of the Society; so again we have an encroachment upon the time of some one placed upon the schedule. Those who arranged your schedule and your presiding officers have endeavored to make all proper allowances for these things, and they appreciate and desire the fullest discussions upon all proper subjects brought before this Society, consistent with the rights and privileges of each and every member, but we sincerely hope that the program as arranged for this session will be carried through as written, as nearly as possible. Your President also urgently requests that every member of the Society will stay until the program is completed.

We are indebted, chiefly, to our most excellent Secretary for the arrangement of papers, your President only taking the liberty of making one or two suggestions and requesting him to place the more theoretical subjects on the first part of the program. I will not venture the suggestion that he has put the best last, but certainly no more interesting series of discussions could be desired than is to be found in the group of papers scheduled for the morning of the last day.

GROWTH OF THE SOCIETY.

I am sorry not to be able to state the exact growth of the Society for the past ten years. For the six years of which we have a correct record the number of members has increased nearly fifty per cent, being 769 in 1906, and 1,100 this morning at 10:30 o'clock, with two counties, Davie and Richmond, still to be heard from. There are 1,700 active practitioners in the State. This makes only about 600 who do not belong to the Society. Not a bad showing.

SUGGESTED IMPROVEMENTS.

It has been stated, and perhaps truthfully, that we do not use systematic and businesslike methods in conducting the affairs of this Society. There is no special time for remitting dues and paying assessments, and our Secretary tells me it is impossible to know accurately the financial standing of the Society or the number of its members at any particular time. I desire, therefore, to join in the request that you adopt a suggestion made by the Conference of Society Secretaries recently held in Chicago, namely, first: that the calendar year and the fiscal year coincide; second: that dues in the county societies be collected on January 1st

and remitted by the county secretary to the State Society not later than March 31st.

One suggestion made by our Secretary deserves your most earnest consideration, namely: the adoption by this Society of a plan of "Medical Defense," which provides an attorney to fight malicious prosecutions and to relieve the county societies of the responsibility of prosecuting quacks and other violators of the State laws. There is an increasing tendency throughout the State for people under the merest pretense to seek damages from the doctor who has been faithful day in and day out, often receiving little or nothing for his services. Indeed, if a physician happens to be comfortably fixed in this world's goods he is in great danger of prosecution at the hands of designing parties whenever he takes upon himself the responsibility of operating or of administering any treatment the outcome of which carries any uncertainty with it. Our profession should arise as one man and we should stand shoulder to shoulder in resisting this growing evil.

I understand that there is no complete collection of the volumes of the Transactions of this Society. I hope the members will give every possible aid and encouragement to our Secretary in collecting the missing volumes and appoint a committee to assist him in this work, if necessary. I am quite sure that the University Library and other public libraries throughout the State will be glad to furnish room for this historical matter.

I would urge that the annual meetings of this Society be fixed at a time that will not conflict with the meeting of the American Medical Association, as is the case this year.

It is not my purpose to discuss in detail matters that will be brought before you by reports from your respective committees and secretaries, but I shall refer briefly to some of these matters with the hope of impressing their importance upon the members of this Society.

The speaker has had an opportunity of reading the reports of your secretaries, and he also had the privilege of attending the meeting of the Health Officers Association held here yesterday.

If he can skim a little cream from the one and gather some appetizing crumbs from the other, he may thereby add to the nutritive value of his offering to you this morning.

LEGISLATION BY THE GENERAL ASSEMBLY OF 1913.

We are fortunate in having in the Governor's chair a Chief Executive who takes an intelligent interest in health matters and is in thor-

ough sympathy with advanced measures looking towards better sanitation and the betterment of all classes of our people. The last Legislature lent a kindly ear to the suggestions of our Committee on Public Policy and Legislation.

A law was passed requiring preliminary education for the study of medicine equivalent to the entrance requirements of our State University. More than one effort had been made previously to secure such an act, and your committee is to be commended on their success this time.

The most far reaching and in some respects the most important piece of medical legislation ever enacted in our State was that of the recent General Assembly, requiring the registration of all births and deaths occurring in the State of North Carolina. The law adopted is what is known as "The Model Vital Statistics Law." I shall not go into a detailed discussion of what is to be accomplished under this law, but I am sure every member of this Society will appreciate its importance, especially after you have heard the report of the Secretary of the Board of Health, explaining its various features.

What I wish particularly to say is that no law, however valuable, can be enforced unless the people are in sympathy with it. The enforcement of this law and the benefit to be derived from it will be largely in the hands of the medical profession; unless you coöperate and give your active support to carrying out the provisions of this bill it will fail to accomplish its purpose. At present only a certain number of cities and towns have even a registered record of deaths with the causes. Our State Board of Health, under the leadership of its very efficient Secretary and the assistant secretaries and the various health officers and local health authorities, deserve great credit for the diminution of deaths from preventable causes.

STATE LABORATORY INVESTIGATIONS.

I ask you to pay special attention to the report that will be read by Dr. C. A. Shore, of the State Laboratory. His report is not long, but contains some very valuable information and timely suggestions. Note what he has to say about wells and drinking water in the production of typhoid and the all too prevalent custom still prevailing as to the use of impure water. Note, also, what he says about the increase of hydrophobia and the remedy he suggests. I am glad to say that Dr. Shore tells me the State Laboratory will soon be prepared to furnish anti-typhoid vaccine at a cost which will be a very small charge.

But a few years ago typhoid fever was a veritable scourge in many

of the towns, villages and even country districts of the State. The sinking of deep wells, the purification of the water supply, the more rigid attention to the disposal of human excrement, the fight against flies and their breeding places, and the use of antityphoid vaccine, whenever feasible, resulted in bringing down the mortality from typhoid fever very materially, yet much remains to be done, and it is our duty to impress upon the public the fact that modern methods for the prevention of this disease are certain and will yield the desired result in every case where they are properly applied.

SOME OTHER INFECTIOUS DISEASES.

I wish to refer briefly to some comparative statements taken from the last census of the United States, with reference to two or three other diseases.

Measles:

I am decidedly of the opinion that we do not attach enough importance to this formidable disease. As a cause of death throughout the United States it is not very high, being only 10 to 100,000 population in the registration districts for 1911, but the record for North Carolina in the registration towns is 15.5, that is, more than fifty per cent higher than for the general country, only Kentucky and Missouri showing a higher death rate.

During the present year measles has been exceedingly prevalent and in some districts a veritable scourge, and I have no doubt that, when the record is written, 1913 will show a larger total of deaths than in any previous year.

Whooping Cough:

What I have said of measles applies with equal force to whooping cough, especially with reference to infant mortality. Here, again, North Carolina mortality, as recorded, is comparatively high; in fact, four times as high as the general registration area, the average for the country being 11.3 against 46.2 for North Carolina.

Having no effective remedy or protective inoculation against measles or whooping cough, we can only rely upon our present imperfect knowledge and uncertain methods. In the meantime, in handling cases of these diseases we should be careful to enforce personal sanitary habits, thorough body cleanliness, a rational quarantine, efficient isolation, and intelligent disinfection.

Pellagra:

In the mortality from this disease the census for 1911 places North Carolina greatly in excess of any other registration area, but this is of little comparative significance when we consider that the States in which it is most prevalent have no registered areas. Still the prevalence of this disease and its great mortality call for our most serious consideration.

We are to be congratulated that one of our fellow members, Congressman John Faison, in response to the unanimous request of this Society, by resolution passed in Hendersonville a year ago, has secured from Congress an appropriation of $45,000 for the study of this disease. Our thanks are due Dr. Faison and other Congressmen in our State for their active work in this matter.

Diarrhea and Enteritis (under two years):

The most important preventable cause of infantile mortality is represented in the group of affections summarized under this title. Here, again, in the last census North Carolina stands at the head of the list in the number of deaths from this cause. The death rate in the registration area was 77.4 per 100,000, while that of the registration of North Carolina was 150.1, or nearly twice that of the average area.

These are conditions that should be handled largely by local health authorities and the family physician. The most important single factor that is under the control of health authorities is the matter of pure milk supply.

PURE MILK SUPPLY.

The subject of pure milk supply is one that few of our municipalities have taken hold of in earnest. Asheville, under the leadership of our fellow member, Dr. L. B. McBrayer, has accomplished more in this line than any other city in the State, so far as my information goes. Recently he has made arrangements by which the city secures certified milk for those customers who are willing to pay the price, which is 60 cents per gallon. This certified milk must contain a bacterial count of 10,000 or less to the cc.

Very shrewdly the health authorities do not impose a maximum count at which to refuse the milk. In order to induce the dairyman to furnish the best possible milk, a wholesale depot has been established which buys milk from the dairyman and pays for it according to the bacterial count. The plan is this: The regular price for milk was 18 cents per gallon by wholesale. Now the depot man says to the dealer, "We will pay you 20 cents per gallon if your milk shows a count of not more

than 20 thousand per cc. From 20 to 40 thousand we will give you 19 cents; from 40 to 60 thousand, 18 cents; from 60 to 70 thousand we will penalize you 1 cent and give you only 17 cents per gallon. Counts above 90 thousand we will not buy at all."

We should impress it upon municipal authorities, the general public and our health officers everywhere that milk of acceptable quality cannot be secured unless the proper attention is given to every detail, including the character of the cows furnishing it, regular inspections of the same, proper care of the cows, the proper cleansing of the cows before milking, proper attention to the vessels and to the character and the cleanliness of the milkers. Follow this with proper care of the milk, so as to prevent contamination by flies, impure air, etc.

There is a mistaken idea that milk can be run through a machine that will separate the trash, dirt and other debris, and then through a pasteurizer to destroy pathogenic bacteria, and that thus a pure and acceptable milk can be produced. Your President had the privilege somewhat recently of passing through a milk handling establishment that seemed to be modern and up to date in every particular, so far as the methods inside of the establishment were concerned. A milk separator removed enough of the material to make one feel that the milk was pure and wholesome without any further treatment; but to make assurance doubly sure, it was then put into a pasteurizer, where with the heat nicely regulated and the time properly spaced according to scientific rules, it was presumed that a wholesome milk would be brought forth. Furthermore, by careful screening, all flies were excluded from the establishment, and an excellent milk device transferred the milk into bottles, without allowing it to come into contact with the air. These were hermetically sealed and placed in a refrigerator, ready for distribution. The speaker drank some of this milk, and he would naturally feel a certain degree of safety in doing so. He also saw with some satisfaction a "babies' milk" prepared in the same establishment and with elaborate care, but lo! when samples of these two kinds of milk were passed into the testing laboratory, what was the result? It was that in the "babies' milk" there were 440,000 bacteria to one cc.; in the adults' milk, 1,600,000 to cc. In other words every time the innocent babe swallowed a teaspoonful of his specially prepared milk, he imbibed with it 1,760,000 bacteria, and in the ordinary glassful swallowed by your President, he was called upon to digest 6,400,000 bacteria.

This milk, gentlemen, was collected from a large number of dairies with no supervision, it was treated scientifically in the milk establishment, but in spite of this care and treatment, it remained a milk unfit for use.

I have called attention especially to milk supply and its inspection, and would like to dwell on other phases of the subject, especially meat, but what applies to one applies to all. I do not expect nor do I advise any municipality to adopt the best methods all at once. To attain this, the public must be educated, the physicians must be in sympathy and lend their support to the movement. This is well illuminated by the comparative history of the movement in certain cities of our State in connection with the work in Asheville.

MUNICIPAL REGULATION.

I heard on yesterday, at the health meeting here, an interesting paper and discussion on the lack of harmony and perfect success of health regulations in some of our Eastern Carolina cities. I am not sponsor for the good people of these towns nor for their health officers, but I think it quite probable that there, too, an effort has been made to progress too rapidly.

Here again I may be permitted to call attention to the Asheville method. Their officers worked gradually, feeling their way, educating the public, advertising their plans, with the result of work accomplished at each step, and above all taking care to have the Medical Society behind them and making no important step without this backing. In this way Asheville has outstripped every other city of the State and her people and physicians are not only harmonious but actually proud of their record.

If I may use a homely illustration—When as a boy in Eastern North Carolina I attempted to jump across the murky streams found in this region, I frequently fell short of the mark and got stuck in the mud, where water slowly flowed around me and the sticky marsh held me. Is it not probable that some of our ambitious sanitarians in the eastern towns attempted to make their first leap too far and instead of cleaning the streams got stuck in the mud and have been floundering there?

The agile mountaineer, however, was not so ambitious. He stepped from stone to stone in his beloved mountain stream, pursuing perhaps a somewhat tortuous route, but always advancing, sometimes getting his feet wet and maybe resting awhile if the water seemed too deep, but as the mountain torrents subsided, as they often do rapidly, quickly he pressed forward again with his eye on the solid rock of the healthy shore which he has now practically reached.

MEDICAL INSPECTION OF SCHOOLS.

With the exception of the Atlantic seaboard and perhaps a few other places, the people of the South and of North Carolina in particular are

dependent upon Boston, New York, Chicago, and a few other cities for accurate information about medical inspection of schools. In my own city of Charlotte representatives of the County Medical Society volunteered to do a certain amount of medical inspection, but the work was not put upon a permanent basis for the lack of money to pay for it. No effective permanent system can be established without salaried inspectors and considerable expenditure for clerical work.

Our State is fortunate in the fact that the United States Government has authorized Dr. C. M. Stiles, with his five assistants and a full clerical force, to do some work in this line in North Carolina. Dr. Stiles' special mission is to study medical inspection of schools as applied to Southern conditions. By the arrangement Dr. Stiles has made with the Government and the city and county authorities the Marine Hospital and all its facilities, and four thousand school children, are turned over to him. By correlating the facilities thus afforded, making a most thorough inspection of the school children in a manner acceptable to the parents, judicious and modern in methods, Dr. Stiles will, without doubt, make a contribution of incalculable benefit in advancing sanitation in our State.

STATE HOSPITALS.

The Sanatorium for the Care and Treatment of Tuberculosis is a most worthy enterprise and deserves the moral support of the Society and its members. Our State was somewhat slow in recognizing the need for an institution of this kind, but there is probably no one today who will deny that there is a great crying need. The "white plague" is ever with us, and despite our increase of knowledge and the optimistic claims of outdoor propagandists, one by one its victims fell, and I venture the assertion that not a year passes that every member of this Society does not see a patient or a friend brought to the final resting place by this disease.

I understand the State Board of Health contemplates new and more vigorous measures for combatting this disease, and I bespeak for them the hearty coöperation of the members of this Society in this work.

STATE HOSPITALS FOR THE INSANE.

These institutions are doing a noble work and are receiving appropriations from the State for their support running well up into the thousands of dollars. Yet there is a constant cry for more room, and I am told that during the past year about half of those seeking admission at the largest of one of these hospitals had to be turned away for lack

of accommodations. My worthy predecessor commented upon the fact that little or no research was being done in these institutions. He might have added that by reason of limited facilities curative measures are not brought to the highest possible state of efficiency. This is not intended in any sense to reflect upon the most excellent men in charge of these institutions, but rather to emphasize the fact that their whole time and the State's resources are exhausted in providing a comfortable home or house of refuge for these unfortunates, and the fact remains that we have not been able to keep up with the demands even in this respect.

I most heartily commend the movement now on foot to erect at the State Hospital in Morganton a building to be known as the "Reception Building"; the idea being that this department shall be used for the purpose of receiving new patients, acute cases, classifying them and retaining for proper treatment those that appear to be curable in a reasonable space of time; by this means it will be possible for those in authority to get better results in the application of modern methods of treatment. The old idea of the incurability of many diseases is passing away, and we can offer to many the hopeful outlook of being restored to health and happiness.

With the limited statistics available in our State, it is impossible to give figures bearing upon the subject, but to the casual observer it would appear that insanity is on the increase in our midst. Whether this be so or not, it is a subject that deserves our best thought and research to the end that the causes may be found and eliminated as far as possible. I doubt very much if this research work can be done solely by those in charge of our State Hospitals. I am inclined to think that the State should make a special appropriation and appoint a special commission to coöperate with the authorities of these institutions and with all other persons who may give any assistance, for the purpose of searching out the causes of insanity and promoting such educational measures as will help to eliminate those causes.

We spend about a half million dollars a year in furnishing food and shelter and clothing to these unfortunate people; can we not spend several thousand dollars also in an effort to limit the number of these patients?

NORTH CAROLINA SCHOOL FOR THE FEEBLE MINDED.

Another important movement in this State was the establishment of the North Carolina School for the Feeble Minded, which is located in Kinston. I believe this Society ought to go on record as favoring the establishment of this important institution. It is really the missing link between the common schools and our hospitals for the epileptic and

insane. The Legislature was not as generous to this institution as I think it should have been. I ask each and every one of you to give your hearty support to this much needed institution.

EUGENICS.

A great deal is being said nowadays upon the subject of Eugenics and at the last meeting of this Society an unusual degree of enthusiasm was aroused on the subject by the most excellent paper of our distinguished member and present Vice-President, Dr. Harris, of Henderson. The work along this line is a threefold one: first, investigation, so as to ascertain the real facts bearing upon the subject; second, educational, the bringing of those facts when ascertained properly before the profession and the public at large, to the end that proper measures may be taken to remedy existing evils; third, legislative. At this stage of the question, this is the least important, except so far as legislation may be necessary to furnish the sinews of war for making the proper investigations and also to confer adequate powers and facilities upon those making those investigations. The time for restrictive legislation such as has been adopted in a few States, I believe has not come for us and certainly should be delayed until it can be undertaken in the fullest possible light.

I have referred briefly, fellow members, to some of the things that pertain to the interests of this Society and pointed out a few things that I believe call for our special attention at this time, and have spoken also of some of the achievements that have been accomplished by our profession in recent years. In view of all these things and considering the earnest, hopeful spirit of those who are leading our profession and educating the public in all health matters, we may confidently look toward the future and hope for even better things. But, as already intimated, when we consider the past and compare it with the present, we must admit that we are living in an age of great privileges, great opportunities, and are enjoying blessings that were scarcely dreamed of a quarter of a century ago.

Recently I heard a speaker addressing the graduating class of a female college and he said he thought it peculiarly appropriate to ask them the question he had in the previous week heard propounded to an audience composed of representatives of all the branches of a great religious denomination throughout the United States. The question was:

"If you had your choice and could elect to live in any period of the world's history, is there any period you would prefer to the present?"

The sweet girl graduate, basking in the sunlight of universal appreciation, covered with the flowers of affection from devoted friends and adoring parents, would quickly answer "No, no other time like the present."

Similarly the militant churchmen, not unmindful of the doctrines of Calvin, whom they follow, or of Knox of equal rank, or of John Wesley, the Christian revolutionist, or of Spurgeon, the pulpit orator, or of Moody, the great evangelist—these gathered religionists doubtless also gave a unanimous "No" to the same question.

If the question were put to other classes and different occupations, the answer might not always be the same. One can easily imagine a young man of military training and warlike spirit looking back with a certain degree of envy at the opportunities of a Wellington, the campaigns of Cæsar, the conquests of Napoleon, the glory of a Washington, the strategy of a Lee, and the exploits of a Stonewall Jackson. The lawyer might not wish to transplant himself back to the days before the Christian Era, yet he will refer to Moses as the "Great Law Giver," and he still sits at the feet of Blackstone. The man of poetic fancy, who dreams dreams and sees visions, would have found genial spirits in the company of Milton, Shakespeare, and Burns.

But to us of the medical profession, no age stands out so conspicuously as this in the greatness of its achievements. Measure as we may the progress of the world, and there have been wonderful strides in industrial development, scientific investigations, the diffusion of education, social betterment and the elevation of standards; still there is no department of progress that can compare with that of the medical profession during the last half a century in the blessings which it has bestowed upon humanity, the lives that have been saved and the relief given to man, woman and child suffering with disease.

Referring to this, not more than a decade ago a public speaker said, "For countless ages prophets and kings of humanity have desired to see the things that you have seen, and hear the things that you have heard. Most truly, the leaves of the Tree of Science have grown for the healing of the nations, and scarcely a year passes that does not record a new victory over some form of disease."

Truly did he speak, and well did he prophesy, for within even the past ten years science has brought forth new treasures, Nature's secrets have been revealed and proclaimed upon the housetops, hidden enemies have been exposed and put to rout. Earth's depths have been penetrated and new streams have flowed forth to heal the diseases and quench the thirst of suffering humanity.

REPORT OF COMMITTEE ON ARRANGEMENTS.

Dr. Bonner, Chairman: I have very little to report. As chairman of the committee will say that I suppose our work shows for itself. You can see what we have done. There has been a considerable amount of work that does not show on the surface. I would like to report that I think all of us have done as well as we could.

Notice to County Societies:

1. The annual election of officers should be held in December.

2. The 1914 dues should be paid at the December, 1913, meeting, or at any rate before January 1, 1914.

3. Any error in the matter of names, initials, year licensed, college attended, etc., should be reported to the Secretary. The information recorded is that sent in by the individual doctors, the secretaries of the county societies, or taken from the Transactions of former years.

4. The recent meeting of the Society changed the by-laws so that the secretaries of county societies are required to make their report to the Secretary of the State Society of membership and dues not later than January 31. The members should pay promptly so that he can carry out his responsibility.

Scientific Papers and Discussions

PHYSIOLOGY AND THE PRACTICE OF MEDICINE.

I. H. Manning, M.D., Chapel Hill, N. C.

Some months ago I heard an eminent physiologist, a teacher in one of our most progressive medical schools, make the statement that so far as he knew there were only four practicing physicians in the whole country making use of physiology in their practice. To one engaged in teaching physiology to medical students this is a discouraging statement. Is it an indictment against physiology or against the physicians? Is physiology without practical value in clinical medicine?

Physiology, though one of the oldest of the medical sciences, is not dead; on the contrary it has many of the qualities of perpetual youth. It has shared in the awakening that has come to all medical sciences in the past quarter of a century and has kept pace in the interest and importance of its discoveries. The old chapters have been rewritten and amplified in the light of modern observations and new chapters have been added and are still being added. Physiological chemistry, once a mere appendix to physiology, has become an independent science; its literature is as voluminous and its discoveries are as far reaching as physiology itself. There has never been a time when we were in the possession of more accurate and detailed knowledge of physiologic processes than we are today.

In all well equipped medical schools physiology and physiological chemistry are taught as true sciences. The conventional lecture has to a very large extent given place to the laboratory. The student now demonstrates for himself many of the fundamental principles and sees with his own eyes the living organs at work under normal as well as under abnormal conditions. He is taught the use of methods and instruments by which to measure the functional capacities and activities of the various organs and to try them out on the living animal. Is this a waste of time and energy?

A true mechanic is never satisfied until he has mastered his machine, until he knows its parts and their functions, until he understands its

difficulties and its limitations, until he is able to put in order and call out all of its latent power, until it becomes responsive to his sympathetic touch. Then he feels the thrill of genuine enthusiasm in the consciousness of his own power.

The human body is a wonderfully intricate machine in the multitude of its parts and the delicacy of its construction, but one does not realize its marvelousness until he knows the purpose of its parts and how they are adapted to perform their functions. Can any one study the ear or the eye in the light of physiology without marveling at its perfection? The nervous system with its tangled mass of cell and fibres is seen in a new light when it is subdivided into definite pathways and centers, each one controlling a definite body function, or synthesizing that indefinable, elusive thing we call a nerve impulse into the complex sensations of conscious life. Studied from the viewpoint of physiology anatomy is vitalized and becomes a subject of intense interest.

Chemistry is a dry subject and impossible to the average student, but when he realizes that every vital phenomenon is dependent upon or associated with some chemical change, some chemical reaction in the body substance, he sees it in a new light. What excites more wonder than the fact that practically all of these complex chemical changes, the decompositions and syntheses, so difficult and indeed in many instances impossible to imitate in the laboratory with the aid of the most powerful agents, are brought about with apparently the greatest ease by the action of enzymes, chemical substances synthesized by the living cell, catalytic agents capable of developing enormous power in incredibly small amounts and acting for an indefinite time, each specific in its action, a specialist in its own field of work? Perhaps even more wonderful are those later discoveries of physiological chemistry, the harmones, such as thyroidin, adrenalin, and the like that are capable of exercising such miraculous power over the vital processes and equally if not more essential to life.

Clinical medicine practiced in the light of physiology presents a new and interesting aspect. Every sick person becomes a lesson in physiology, every diseased condition emphasizes the importance of some body function and brings to light some protective or compensatory process of essentially a physiological nature. With a leaking heart valve there comes enlarged heart, a compensatory hypertrophy, and all goes well—a physiological triumph; later a dilated heart appears and with it dyspnœa, cyanosis, œdema, scanty urine, death—a physiological tragedy. This is a common clinical history, but it is a wonderful lesson in physiology, suggesting innumerable lines of thought full of intense interest.

A woman, thirty-five years old, was brought into the hospital suffering with an intense pain in the back and persistent contraction of the muscles, especially of the extremities. The visiting physician made a tentative diagnosis of tetany. None of us knew what tetany was, but the diagnosis was written on the bed card and nothing was said. Some months ago I was asked to see a child, three years old, who a week before had had what appeared to be an ordinary convulsion, but in spite of the ordinary remedies the child had remained in a cataleptic state with its muscles in a distinct though slight persistent spasm, otherwise it seemed to be in good condition. Again a diagnosis of tetany was made, calcium lactate prescribed, and the child gradually recovered. But what a difference in the two cases! In the interval we had learned of the parathyroids and their functions, those wonderful little bodies so small as to escape detection in the ordinary dissections; we had learned of the brilliant work of MacCallum; of the success of thyroidectomy, by reason of their discovery, and tetany was seen in a new light.

Who has seen a cretin develop into a normal child under treatment with thyroid extract and is not willing to acknowledge the debt of clinical medicine to physiology? The success of this method of treatment opened the unexplored field of organotherapy. The potency of thyroid extract and adrenalin raised our expectations and led us into some wild speculations concerning the functions of the ductless glands and value of organ extracts. Undoubtedly essential to life and often responsible for some very obscure clinical conditions the functions of the ductless glands are for the most part clouded in mystery, and the various organ extracts or their combinations concocted by the proprietary medicine makers are practically useless. I hope, however, the last word on this interesting subject has not been said and we may yet find something of practical value.

Clinicians are often confronted with obscure and frequently grave conditions resulting, as we believe, from disturbances in metabolism, and yet there are very few such conditions about which we have any definite knowledge. Metabolism is extremely difficult, but I believe we are making more rapid progress in this than in any other subject. Whatever may be found to be the cause of diabetes mellitus we have come to feel that the persistent appearance of sugar in the urine is significant of deficient oxidation and the later appearance of the so called acetone bodies as significant of a still more serious deficiency. Our attention has, therefore, been called to the physiological oxidations and we see in many conditions evidences of disturbances in this phase of metabolism. In diabetes the oxidations of the sugars are pri-

marily affected. In cretinism and exophthalmic goitre we find conditions illustrative of deficient and excessive oxidations affecting especially the fats and we have additional proof in the successful treatment of obesity by the judicious use of thyroid extract. We are also beginning to see in the various toxæmias of endogenous origin evidences of deficient oxidation. Of the toxœmias the best known perhaps are the acidoses. Williams, of Hopkins, has called attention to the ammonia content of the urine as at least one index to the degree of acidosis and from the physiological side his suggestion has much to commend it. We know that many organic acids appear as intermediary products in the metabolism of the three chief body stuffs, the proteins, carbohydrates, and fats, and as they never appear in the excretions under normal conditions except in very insignificant amounts we feel certain that they are completely oxidized. We also know that ammonia is a constant intermediary product in the metabolism of the proteins and under normal conditions it is practically completely converted into urea. Should the acids fail of oxidation they unite with the ammonia rather than the fixed alkalis and are eliminated in the urine as ammonia compounds, hence an excess of ammonia in the urine is an index to the amount of unoxidized acids in the blood. An acidosis, therefore, does not necessarily mean an excessive production nor the formation of abnormal acids, but a failure in the oxidations.

Of the other types of toxæmias we know at present very little. Heretofore we have had to rely almost exclusively on an examination of the urine to reveal the nature of metabolic disturbances, but recently Folin, of Harvard, and others have suggested methods of analysis applicable to the blood, and they have already added very important facts to our knowledge of normal metabolism and will undoubtedly clear up many points of interest in connection with the toxæmias. The toxæmias are problems of physiological chemistry.

In conclusion let me say that I have selected these subjects to illustrate the relation of physiology to the practice of medicine. I might have chosen many others with equal propriety. My purpose has been to suggest to you what has been to me a real help and a genuine pleasure in the practice of medicine—a careful review of physiology.

DISCUSSION.

Paper discussed by Dr. J. W. Long, Greensboro, N. C.*

Dr. L. B. Morse, Hendersonville: There is one phase of this very interesting paper, particularly that part in which the essayist spoke

*Dr. Long's discussion was not heard by the stenographer and was not procurable.

regarding the internal secretions, about which I would simply like to add a word. Of course the real character of the internal secretions is something that none of us knows very much about. I would simply like to add a clinical point in connection with hyperthyroidism, which has been of no little interest to me. Some time ago Dr. W. B. Stanton, of Philadelphia, now dead, who was perhaps one of the most promising pathologists studying the subject of tuberculosis, came to the conclusion that hyperthyroidism was a frequent complication of this disease. I have, comparatively recently, seen seven or eight cases of hypothyroidism complicating tuberculosis. This has led me to believe that it is very much more common than we have thought in the past. I am forced to believe that if physicians will examine cases of tuberculosis, incipient as well as advanced, they will be surprised to find in a number of these patients an increase in the thyroid secretion, as evidenced by more emaciation, moisture of the skin, slight protrusion of the eyes, more rapid pulse than is to be accounted for by the tubercular toxins, increased oxidation, etc. I mention this as an interesting clinical experience which I believe to be not commonly recognized.

WHY IS A LABORATORY, AND WHEN?

A. S. Pendleton, M.D., Raleigh, N. C.

In considering the aid in diagnosis, prognosis and treatment to be derived from accurate clinical laboratory methods, I stand convicted of a certain amount of prejudice. However, I shall endeavor to convince you that there is more than prejudice in favor of the position I take.

Let us first consider what may be obtained from the blood. The typhoid bacillus may be isolated by cultural methods as early as the first to the third day of the disease, but it is seldom, except in the hospital, that advantage of this fact may be taken. You will agree that the Widal test gives, when present, pathognomonic evidence of typhoid. Unfortunately it is late in the disease before the test becomes positive, but during the first week, if the usual symptoms are present, together with leucopœnia and lymphocytosis, and tuberculosis can be eliminated, the diagnosis is to all intents as positive. Then the paratyphoid infections can only be differentiated by the agglutination test, and this is of importance from a prognostic standpoint at least.

Until recently the differential count has not been utilized to the fullest, but now practically every patient received in a hospital has a differential count made within the first twenty-four hours. A diagnosis

can frequently be determined, though not made, by the differential in appendicitis, malaria, typhoid, and a masked tuberculosis. In addition it always clearly shows a septic condition, but unfortunately gives little aid as to the location of the focal point or the variety of the causal microörganism. Arriving at a correct prognosis may be materially aided thereby in any of the infections, but especially in croupous pneumonia, the return of the eosinophiles being of favorable import.

The Wasserman reaction positively identifies syphilis in over 90% of cases in the secondary stage, provided they have received no treatment or inefficient treatment, and in over 95% of cases where the disease is inherited; furthermore it is by all odds the best means we have at present for determining the efficiency of treatment. A large proportion of the most prominent syphilographers now treat the disease actively until two Wassermans, taken six months apart, are negative.

Of course I need not say that diagnosis of the socalled blood diseases is absolutely dependent upon the microscopical examination of the blood; as for example the leukæmias and primary anæmia.

Much may be obtained from a careful examination of the urine, provided a proper interpretation is placed upon the findings. In recent years, or better, months, a great deal has been done in the way of determining the permeability of the kidneys; that is, in telling whether the kidneys are capable of performing their proper function as compared with normal kidneys. This is done in two ways: First, by determining how long it takes to eliminate a definite amount of sulphonphenolphthalein: 6 mg. of the substance is injected into the muscle, the patient having been instructed to drink 500 cc. of water a half hour before to insure abundant renal secretion; then the bladder is emptied by catheter and the instrument allowed to remain *in situ* till a pink color appears in the receiving vessel, which contains a small quantity of Na OH solution. The time elapsing between the injection and the appearance of the drug in the urine is carefully noted and the catheter removed. At the end of one hour the patient empties the bladder and again at the end of two hours. The percentage of sulphonphenolphthalein contained in the first- and second-hour specimens is carefully determined by means of a colorimeter. If more than twenty minutes elapses before the drug appears in the urine or less than 30% is eliminated in two hours, the kidneys are seriously affected. There are various modifications of this test, but for our purpose this description will answer for them all. The test is complicated and there are many possible sources of error, but in the hands of experts has proven satisfactory.

Secondly, by applying Wohlgemuth's diastase test to the urine: The principle upon which the test is based depends upon the fact that all normal urines contain enough diastase to digest an equal amount of standard starch solution in one hour at 37 C. when in dilution of 1-64. This test has been tried out in His's clinic in Berlin in some thousands of cases and has there proven about as dependable as the phenolphthalein test, besides having the tremendous advantage of being so much simpler in the performance.

The technic of the test is as follows: Into each of ten test tubes put one cc. of 9% salt solution, to the solution in the first tube add one cc. of the urine to be tested, mix thoroughly, and transfer one cc. of the mixture to the second tube, again mix well and transfer one cc. of mixture to the third tube, and so continue to the tenth tube. Add to each tube one cc. of standard starch solution, incubate at 37 C. for one hour, remove from the incubator and add to each tube one to three drops of 1-50 normal solution of iodine. Should the urine be normal, the seventh tube will be the first to show a blue color. From one to six there will be varying shades of brown, making it easy to tell at a glance the permeability, the blue occurring earlier in direct proportion to the involvement of the kidneys.

I have adopted the following nomenclature:

When the blue appears first in 7th tube the permeability is excellent.
6th tube the permeability is good.
5th tube the permeability is fair.
4th tube the permeability is poor.
3d tube the permeability is rotten.
2d tube the permeability is very rotten.

When used for determining the advisability of renal surgery the ureters should be catheterized and the urine from each kidney tested separately. This test is of especial advantage to the general practitioner as it is so often of vital importance to know positively whether or not a chronic interstitial nephritis is present; when, from the ordinary urinary findings and the symptoms complex, this may or may not be the case. In a large majority of the cases the patient would refuse absolutely to have the sulphonphenolphthalein test made, but surely no objection to furnishing a 24-hour specimen of the urine could be made. This test should always be carefully checked against the 24-hour urea elimination.

A word of warning in regard to the interpretation of the usual tests made by the general practitioner will not be out of place here. The ordinary heat and acid test for albumin may give a distinct cloud and the specimen contain no serum albumin, the cloud being caused by the

presence of nucleo albumin. The clinical significance of this is still a disputed point, but all are agreed that its presence is of much less serious import than that of serum albumin. This source of error is readily eliminated by always adding to the urine an equal quantity of saturated salt solution before applying the test, as nucleo albumin is not precipitated by heat and acid in the presence of sufficient inorganic salts. This nucleo albumin may precipitate the copper in Fehling's solution and should be removed by precipitation and filtration before applying the latter test. Whenever Fehling's test shows the reaction for sugar it is well to check it up with the fermentation and phenylhydrazine tests to make sure that the reaction has been due to sugar and not one of the many other substances which reduce copper in alkaline solution. The same applies to the popular Haines solution.

Quite a good deal as to the functional activity of the liver and pancreas may be obtained from an examination of the urine and feces. The presence or absence of the various parasites may readily be shown from an examination of the feces.

The diagnosis of gastritis, carcinoma, or ulcer of the stomach is materially aided by an intelligent analysis of the stomach contents after a test meal has been administered, but here again it is necessary to have had considerable experience to be able to arrive at a satisfactory conclusion from the findings.

The necessity for and the satisfaction obtained from the pathological examination of the tissues removed from the body is, I am sure, recognized by us all.

Now all but a very few of the tests required could be made by the general practitioner just as well as by the laboratory man, but the busy doctor has not the time, nor has he generally the inclination to do this work. This is a condition which was realized sooner in the North and West than in the South, but the amount of work which the doctors of our section of the State have been good enough to give me since my beginning in this line of work convinces me that we Southern men are now at least fully alive to the situation. Hence, the laboratory.

Having disposed of the *why*, let us briefly consider the conditions in which the laboratory may be of assistance, or in other words, the *when*.

A Wasserman should be made in all cases of suspected syphilis, provided at least a month has elapsed since the appearance of the supposed initial lesion and the patient has taken no mercury within two weeks, for the purpose of making an absolute diagnosis, and in all cases of known syphilis after six months and one year's treatment to determine the efficiency of the same. If you wish to follow the method of

McDonagh, of London, who has had a very extensive experience, you will have a Wasserman made eight days after the administration of salvarsan, and if found positive give another dose of 606, having the test again made at the expiration of eight days, continuing this till the Wasserman is negative, and following with mercury by intramuscular injection extending over a year. He claims that by the use of this method he positively cures his patient in one year. From a personal acquaintance with the man I believe I can safely advise you to take his statement at its face value. In all cases of suspected beginning paresis or tabes dorsalis, a Wasserman should be made and, if positive, 606 given at once, as wonderful results are obtained if the drug is given in time.

Both a differential count and an agglutination test should be done in cases of suspected typhoid or paratyphoid fever, and a blood culture if possible.

A permeation test as well as a careful microscopic and chemical examination of the urine is indicated in every case of suspected nephritis.

In diabetes the urine should be tested for ammonia elimination and for acetone and diacetic acid at least once a month, as the life of the patient may often be greatly prolonged by the timely administration of sodium bicarbonate. It has been comparatively recently discovered that a beginning acidosis will readily yield to the proper treatment, but as you know only too well when it has been thoroughly established practically all hope is gone.

The stomach contents and feces should be examined in all cases of chronic indigestion, and whenever the symptoms point to stomach or intestinal disease. In marked anemia without obvious cause, and even then to determine the extent and variety, the blood should be examined, and also the feces.

A differential count as well as a search for the malarial organism should be made after a chill, especially one following childbirth or a surgical operation, in order to eliminate malaria, as a possible cause in this locality, or a probable one in malarial sections.

A culture should be made in all throat infections to eliminate diphtheria and to determine the particular organism directly responsible, as we now know that many supposed cases of simple pharyngitis, tonsilitis, and laryngitis are due to infection with the Klebs-Lœffler bacillus. Another throat condition which is, I believe, frequently overlooked or rather mistaken for something else, is the socalled "septic sore throat," epidemics of which have been reported from Chicago, Boston, and Baltimore. The causal organism has many of the characteristics of the

diplococcus pneumoniæ, and also of the streptococcus. It is considered by some bacteriologists a form of pneumococcus and by others a new streptococcus. It is immaterial which is right, as the microbe can be readily identified by its morphology and cultural characteristics and so a positive diagnosis of the disease made. That the disease is prevalent in North Carolina is proven by the fact that I have already seen and positively diagnosed eight cases, six of these being in Raleigh. The presence of the causal germ is of course diagnostic, but the usual symptoms are so distinctive as to make it almost possible to make a positive diagnosis without the aid of the microscope. The prostration and pain in the throat are usually out of all proportion to the local lesions. A false membrane may or may not be present; when it is, it is easily removed and the mucous membrane underneath is smooth, with no bleeding points and with the general appearance you find in simple catarrhal conditions. There is a marked tendency to otitis media, septic endocarditis, septic peritonitis, and pyemia. Pneumonia is a rare complication. The mortality is high, running 20% in the beginning of the Baltimore epidemic.

It is contagious by contact, but seems to be essentially a milkborne disease, as the Baltimore epidemic was controlled by stopping the delivery of milk from two dairies, after it was found that a large majority of the cases were among the customers of these dairies, and it was further found that one or more of the employees of each of them had had attacks similar to those of the victims of the epidemic.

The treatment recommended by the reporters is symptomatic, no specific having been found. I have found that an autogenous vaccine gives splendid results in the treatment of the resulting otitis media and endocarditis.

In any long continued infection, when it is for any reason impossible to remove the causal focus, an autogenous vaccine will materially aid in the treatment.

A differential leucocyte count and a microscopic examination of the feces should be made in suspected infection with intestinal parasites.

In suspected appendicitis, to eliminate typhoid, all that is usually necessary is to have a differential count made. This will not differentiate a leaking pus tube, but the treatment of the two conditions being the same, the fact is of no clinical importance. For example: Given the symptoms of appendicitis without the septic factor and with or without leucopenia and it is quite certain that the condition is not appendicitis requiring operation. On the other hand, given the same symptoms with the septic factor present and you will always have a condition requiring surgical interference.

In suspected pancreatic or liver disease an examination of the urine and feces may be of material aid in establishing a diagnosis.

May I give you some of the "dont's" as applied to the use of the laboratory?

Don't send a specimen for a Wasserman within six weeks of the appearance of the initial lesion, but a smear from the sore instead, nor during the continuance of mercurial treatment, but stop the treatment for at least two weeks before taking blood. Allow no water to come in contact with specimen of blood upon which a Wasserman is to be made as only one drop will vitiate the findings.

Don't send a specimen for a Widal within the first week of suspected typhoid, but a smear for a differential instead, or blood for culture.

Don't change your tubercular diagnosis because no t. b. are found in sputum.

Don't say your patient has no nephritis because no albumin is shown in the urine by the ordinary tests. On the other hand, don't make a diagnosis of Bright's disease because albumin is found. In suspected kidney disease it is necessary as perhaps in no other condition to interpret your urinary findings in the light of the symptom complex. These remarks apply to casts as well as albumin.

Don't make a diagnosis of diabetes because the urine reduces the copper in Fehling's solution. Many substances besides sugar do this. On the other hand if Fehling's is not reduced you may be reasonably sure of the absence of sugar. Be sure not to lose sight of the fact that sugar may be physiologically present in the urine.

Don't send a specimen of feces for examination for the ameba coli but the patient instead, as the ameba will die in transit, while the patient may survive the ordeal.

Don't have an autogenous vaccine made for an infection the causal focus of which may be readily reached and treated surgically. Vaccines do the most good in subacute and chronic conditions when the focus of infection can not be thoroughly removed. As for example: Chronic prostatitis, chronic indurated acne, chronic otitis media, and furunculosis.

Don't send a cover slip blood smear, but a slide smear instead, as the former may not contain sufficient leucocytes for a count.

Don't send pathological tissue in alcohol, but in 4% formaldehyde solution, and be sure to give the location from which it was removed.

Don't place the laboratory findings above everything else, but interpret them in the light of the signs and symptoms as exhibited at the bedside, as the findings usually constitute an aid to diagnosis and only occasionally a diagnosis *per se*.

DISCUSSION.

Dr. E. T. Dickinson, Wilson: I am very much impressed by Dr. Pendleton's paper. I have been wanting to hear just such a paper as this for a number of years, because I have noticed in the profession that, although we know better, we very frequently hear the expression, "We sent the specimen to the laboratory and the findings are that there is no typhoid or diphtheria, etc." In spite of our knowledge that the laboratory finding is not a final diagnosis when the findings are negative there must be an inherent tendency in human nature to regard it as the first and final test.

Dr. Albert Anderson, Raleigh: I can answer in one case, and I know of several cases in Dr. Pendleton's work, but I have this in my mind. It is necessary to have this clinical work done because it sometimes enables a man that can not make a better diagnosis to save a life.

I had a case with a very mysterious swelling of the left breast. Upon examination I found a little abrasion of the skin under the left arm. I thought it was either rheumatism or intercostal neuralgia. He did not get well with my treatment and I got Dr. Pendleton to make a test of his blood. Pus infection was found. Meanwhile, the family had begun poulticing. Next morning I went to lance the swelling. I cocainized about the middle, entered my knife first a half inch, found no pus, and went in an inch. Being a fat man his chest walls were three inches thick. I went in two inches, but I found no pus. I went in three inches, the length of my knife, and entered a pus cavity and found the source of the trouble and it had to drain for several days. The man believed, and I believe, that this finding of Dr. Pendleton's assured me in lancing until I found it, and I believe lancing saved the man's life.

As to septic sore throat, which Dr. Pendleton speaks of, I remember one case I was in close touch with. I did not know what it was and after treating it for some time and the patient did not get well, Dr. Pendleton made an autogenous vaccine that soon cleared up the case. He was in Baltimore at the time this case developed at his home. I believe his findings really enabled us to cure the cases of septic sore throats found in Raleigh. If the clinical laboratory will do that it is a thing we doctors need. I remember many cases in which Dr. Pendleton helped me with the permeability test. It enabled me to give these patients advice they will need to prolong their lives.

BLOOD PRESSURE AS IT CONCERNS THE GENERAL PRACTITIONER.

L. G. Beall, M.D., Greensboro, N. C.

At the outset, let it be understood that I do not claim any originality for the subject matter of this paper. I have borrowed freely from various sources and especially from some data sent me by Dr. Janeway. However, it is with the hope that I may arouse the interest of the members of this Society and bring about a healthy discussion that I have chosen this important subject.

From the earliest times the pulse has been taken as one of the most important diagnostic indications of disease. With the perfection of scientific instruments for measuring the pulse pressure, the study of the causes of variations in pressure, the effect of these variations upon health and the length of life, and the treatment needed, has commanded the attention of some of our most astute clinicians.

Normal pulse pressure depends upon the force with which the heart contracts, the resistance met with in the peripheral vessels, the elasticity of the arterial wall, and, to a less extent, upon the total quantity of blood in the body and upon its viscosity.

A definite amount of pressure is needed to overcome the normal vasomotor tone. This pressure is designated by Janeway to be the "essential pressure" and is about 50 m.m. of mercury. In addition there is a pressure of from 70 to 90 m.m. which is dependent upon various mental, physical and physiological factors.

From the study of a large number of readings upon applicants for insurance and other normal individuals, it has been found that the normal systolic pressure for an adult male varies between 120 and 140 m.m. of mercury. Janeway also makes the statement that the range between 145 and 160 m.m. is debatable ground, while a constant pressure above 160 m.m. is abnormal.

It is with the variations from these limits that the general practitioner is concerned, especially those above the normal limit, and it is to these conditions that I would direct his attention.

The examination of each patient is for the purpose of diagnosis. Hence every convenient means should be used which will give us any accurate, definite information. Therefore the general practitioner should always carefully examine every new patient, making the blood pressure reading part of his daily routine.

The finding of a heart lesion, which has been wholly unsuspected before examination, is an almost daily occurrence for some of us. In the same way, a high blood pressure is frequently discovered in an apparently normal individual. Without a blood pressure reading, an experienced clinician would perhaps detect the accentuated second aortic sound and could determine a cardiac hypertrophy, sometimes the only evidence, besides a hypertension, of chronic nephritis. But we all know how difficult these signs are to elicit in an emphysematous chest, or in one covered with a generous layer of adipose tissue.

The importance of the blood pressure reading in cases of this kind is shown by a study of the hundred cases reported by Janeway. All of these cases had a blood pressure reading of 170 m.m. and above and in 79 per cent nephritis was the clinical diagnosis. This fact in connection with rapid increase in mortality from kidney disease, shown in this country during the past 50 years, gives us food for serious thought. In the New England States this mortality is ten times higher than at the beginning of the Civil War and this increase has been universal throughout the country, reaching its high watermark in New York City.

In the study of the early symptoms shown in Janeway's cases we find that 48 had dyspnea upon exertion, 32 had polyuria, 24 had paroxysmal dyspnea, 16 had neurasthenic symptoms, 15 had anginoid pain, 15 suffered from headache, and 14 had loss of flesh. Any one of these symptoms therefore, calls for the use of the sphygmomanometer.

In drawing any conclusion from a high pressure reading, one must eliminate all temporary influences tending to raise blood pressure, perhaps the most important of which are excitement and apprehension on the part of the patient. Therefore, a second reading upon a subsequent day should always be taken, unless the pressure is above 180 m.m. of mercury.

A high blood pressure reading in a vast majority of cases is due to chronic nephritis, although the urine may be free from albumin for years and the patients present only cardiovascular symptoms or symptoms of neurasthenia. The more rapid cases in the young adult showing the cardinal symptoms of marked polyuria, severe headache, gastrointestinal disturbances and ocular changes, may be diagnosticated without the use of the sphygmomanometer, although they also show hypertension.

Arteriosclerosis is never the cause of any marked permanent increase in blood pressure as has been shown by the experiments of Longcope in narrowing the mesenteric arteries.

There have been some cases of hypertensive cardiovascular disease

without underlying chronic nephritis, as is proved at autopsy. These cases, however, are rare and the cause of the hypertension is obscure.

Having discovered a high blood pressure, what should be the attitude of the general practitioner in regard to treatment? No one today considers the discovery of a well compensated heart lesion an indication for the immediate use of drugs. On the other hand, no one will say that we should stop examining the heart just because the patient does not present cardiac symptoms.

It is becoming more and more clear that the duty of the physician is the prevention rather than the cure of disease and the discovery of any evidence of disease should cause us to take steps to prevent its further development. The discovery of a high blood pressure as well as that of a cardiac lesion affords the physician an opportunity to safeguard the integrity of the cardiovascular system.

As the therapeutics of blood pressure will be discussed later in the program, I will only say that this treatment includes the regulation of the patient's entire daily life. We should stop the use of any stimulant which will affect the myocardium, among the most important of which is tobacco, and so direct the habits of the patient that we will prevent any undue excitement, worry or nervous strain and sudden or excessive exertion. We should give definite directions as to exercise, massage, diet and baths.

As this calls for the entire regulation of a patient's life and perhaps a complete change in his mode of living, it is much more difficult than the writing of a prescription on the part of the doctor, or the swallowing of a nauseous dose on the part of the patient.

In the treatment of hypertensive cardiovascular disease and nephritis blood pressure readings should be taken frequently to determine the effect of the drugs prescribed. However, we should not neglect the clinical symptoms in these cases as they are more important than the blood pressure readings. It should also clearly be recognized that in some cases a high blood pressure is nature's method of trying to correct a serious pathological fault. We know that in well compensated cases of aortic insufficiency the blood pressure reading is frequently well above 200 m.m. of mercury. It is only when serious clinical symptoms, such as dyspnea, anginal attacks, or uremic symptoms appear, that active treatment should be begun. In these cases the sphygmomanometer will give us definite information as to the effect of our digitalis and vasodilators.

Not only should a blood pressure reading be taken in the examination of every new patient and in the treatment of cardiovascular disease, but

should be taken in every examination certifying to a condition of health. Most of the life insurance companies now require this test of every applicant for insurance. The chief value of this test lies in the fact that by a study of these records in conjunction with the pulse, we are able to detect beginning pathologic change in the cardiovascular system or in the kidneys, often before there are any definite signs in the physical examination, personal history, or urine. In the past numerous applicants suffering from these diseases have been passed into the companies. These cases have invariably shown a high rate of mortality and their families have, within a few years, collected large policies. It is in these cases that it is especially important that no injustice be done the applicant by the record of a single abnormal reading.

I believe that no case of obstetrics should be undertaken by a physician without the repeated examination of the blood pressure as well as of the urine. Cases which go above 150 need careful watching as they may at any time develop into a case of eclampsia. A sudden rise of blood pressure is the most dependable indication we have of this threatened trouble and is more important than the discovery of an albuminuria because it shows much earlier. Hirst has set the limit of pressure to be 180 m.m. of mercury and always empties the uterus of the patients showing this reading, regardless of the symptoms.

The great practitioner has in the use of the sphygmomanometer a definite means to contribute much to our scientific knowledge of the subject. The study of blood pressure is still in its infancy. The results of experiments trying to determine the cause of high blood pressure up to the present have been disappointing and of the real physiological mechanism we know nothing as yet. If the general practitioner should begin recording as a routine measure the blood pressure of his patients, following that patient from year to year, from infancy to old age, he would contribute most accurate and definite data in regard to the diagnostic value and normal limits of blood pressure. In hospitals we see only the end results of disease and the pressure taken there may be affected by many concurrent causes. Twenty years of careful collection of statistics in connection with the appearance of the earliest clinical symptoms will give us complete case records of the whole panorama of life, from health through the stage of chronic disease, to its final termination, where the lesion may be identified at autopsy.

There are other important conditions in which the blood pressure may be of diagnostic value, such as the acute abdominal pain which occurs in the gastric crises of tabes and attacks of lead colic. By it, these conditions may be more clearly differentiated from biliary or renal colic.

In most of the acute infectious diseases the blood pressure is low with the possible exception of epidemic meningitis.

In the depressive phychoses with anxiety, as melancholia, the blood pressure is elevated, whereas in the states of maniacal excitement the pressure is lowered.

In the determination of blood pressure the practitioner should never neglect to ascertain the diastolic as well the systolic reading, as it is the mean blood pressure which gives us our diagnostic data.

I have not said anything in this paper in regard to the lower limit of the systolic readings as I have been unable to find enough data concerning it from which to draw a definite conclusion as to its importance. Cases with a pressure as low as 50 m.m. have been known to recover. It is of most importance after severe hemorrhage or during surgical shock with the possible exception that we will find later that all tubercular subjects have a uniform low pressure.

In conclusion I will say that in the use of the sphygmomanometer the general practitioner has an accurate means of diagnosis and should make use of it—

First, in the examination of every new patient.

Second, in the treatment of cardiovascular disease.

Third, in all obstetric cases.

Fourth, in all examinations as to the state of health.

Fifth, in order to contribute to the knowledge of this subject.

Sixth, in acute abdominal pain.

Seventh, in suspected epidemic meningitis.

Eighth, in psychiatrical cases.

Ninth, in suspected cases of hemorrhage.

Tenth, in cases of tuberculosis.

DISCUSSION.

Dr. Oscar McMullan, Elizabeth City: I was very much entertained and highly instructed by Dr. Beall's paper. He says when a man has high blood pressure he should leave off all stimulation—tobacco, high living, meats, etc. But the point I want to emphasize is, Why should we wait until we get high blood pressure before treating it? The time to commence treating for high pressure is the day the child is born. Why is it that the preaching of us doctors has so little effect on our clients? I am afraid it is because we do not live as we preach. We give very good advice but set a very poor example. Nobody believes in hell until he gets in it. It is only when the sphygmomanometer shows a pressure of 180 that we sit up and take notice. People, after reaching

the age of forty, live a shorter time than ever before. People are living more luxuriously and more rapidly than ever before. The consequence is that the death rate after forty is increasing instead of diminishing. I think one of the main reasons is that while we preach such magnificent sermons we set such a very poor example.

Dr. A. S. Pendleton, Raleigh: A good deal has been said about high blood pressure, and I think a word might be said about low blood pressure. When the pressure is below 160 and you have evident well developed cardiovascular disease, it is too late for therapeutics, but it is well to tell the family to get ready for the end. The left heart has been worn out in overcoming the resistance of hardened arteries. Low pressure is of much more importance, it seems to me, than high pressure, from the prognostic standpoint.

Dr. L. D. Wharton, Smithfield: I agree with Dr. Beall about the stimulation of childhood. I think one thing has been left out, the mental stimulation. The proud mother puts her child in the carriage and has it taken all around town to show it before she can get out of the house. That is a very wrong thing. As the child grows older, keeping late hours, allowing them to go out every night to the moving picture shows and other places, keeping them up late at night and letting them rise with us—all these things are very wrong. That is a very common cause in producing a nation of nervous people.

Dr. E. T. Dickinson, Wilson: As to blood pressure in obstetrics with threatened eclampsia, I had a case nineteen years of age showing a blood pressure of 180, no symptom except severe headache. I was called in for the headache. Fortunately I happened to take my sphygmomanometer with me on my first visit so I took the blood pressure. I asked for a specimen of urine as soon as possible but the urine showed no albumin. Upon the following night she commenced having puerperal eclampsia. She had six convulsions between the hours of one and seven in the morning, when she was delivered. She had many more convulsions and finally died after five days. I think the blood pressure is very likely of more importance in these cases than the examination of the urine.

Dr. J. T. J. Battle, Greensboro: This is a very important means of diagnosis and I want to compliment Dr. Beall on his paper, and would like to hear it more fully discussed. It does not require but a minute's time to take the blood pressure, and you certainly gain a great deal of information. Doing insurance work, when I find a blood reading in a man under thirty years of age around 110, or lower, I think

his family history is exceedingly important. If there is a case of tuberculosis in that family, regardless of the findings of the chest, that person is rejected or rated up. With a person forty years of age or over with a blood reading of 160 or over I look carefully into the family history to see if there were any cases of apoplexy or Bright's disease, and if so I decline him insurance, because there is a beginning of some trouble which he has inherited from his ancestors.

I desire to congratulate the profession of the State on the great majority of the members of the profession providing themselves with sphygmomanometers. We call for blood pressure in all insurance examinations and I feel sure that we get it in ninety-five per cent of the cases.

Dr. R. L. Payne, Norfolk: I want to say one word in connection with Dr. Battle's remarks, and that is to emphasize what Dr. Beall has said about repeated examinations. Blood examinations as made for life insurance are absolutely worthless because these is usually only a single examination. There are so many things that make a difference in blood pressure that all these ought to be taken into account. A single observation does not tell a thing except to warn us that the blood pressure should be studied. As an indication of health for life insurance companies I do not believe a blood reading should be taken into account at all unless it is repeated several times. A single observation means almost nothing. I wish also to refer to the importance of a study of the blood pressure in the fracture of the base of the skull. A high blood pressure in these cases is conservative and indicates an effort on the part of nature to furnish the vital centers with the blood they are lacking from cerebral pressure, but a falling blood pressure is an indication of immediate danger and demands immediate and extensive decompression operation to save the patient's life. I wish to emphasize this point as many of us are apt to think in all brain injuries high blood pressure must be combatted and so resort to measures that can but prove disastrous.

Dr. L. G. Beall: I want to thank the gentlemen for their kind expressions. I think the blood pressure should be put on a parallel with the temperature in insurance examinations. If the temperature is elevated the doctor postpones action on the case, and the applicant is required to come back. If he finds an abnormal blood reading he should treat the patient in the same way and have him come back for a subsequent reading.

PARALYSIS OF ONE OF THE EXTRAOCULAR MUSCLES.

J. G. Murphy, M.D., Wilmington, N. C.

Four of the twelve cranial nerves go to supply that most sensitive and delicate of the body's organs, the eye. One only of these is sensory, while three are motor supplying muscles which have special functions to perform.

When we find one of these muscles is failing to function—is paralyzed—we look for a cause and administer the proper remedy if we are to be the faithful physician. The symptoms show plainly that something is wrong, but when we attempt to settle the fact as to where the lesion is located and what is its nature we cast a downward glance and with our phalangeal extremities scarify the superior surface of our craniums.

I wish to cite one case which I found helpful and instructive because of the successive nature of the conditions arising, and because of the final outcome and positive proof that the diagnosis was correct.

J. P., age 56, farmer, previous health good, good family record, large, well proportioned body, consulted me on July 1, 1911, complaining that he could not rotate his left eye outward. This was the only trouble he had with the eyes at this time except a small amount of hyperopia and need for the usual presbyopic correction at his age. This was prescribed. All the eye muscles were functioning properly except the left external rectus, which was distinctly paralyzed. On attempting to rotate the eyes to the left he had a diphlophia which was exceedingly annoying to him.

I was as optimistic as we are sometimes forced to be, and gave the universally recognized treatment, strychnia. My patient lived in the country fifty miles from me and I did not see him again till September 14th, when he came into my office walking with a staggering gait. His local physician had had him on iodide of potash in increasing doses for six weeks, but his condition was growing worse all the time. He then had paralysis of all four of the lateral eye muscles and could not converge, but mind you, could accommodate.

There was a tingling of ends of fingers, a tinitus in left ear, inability to touch end of nose with right hand, and exaggerated patella reflex on right side. I readily decided he had a lesion of the pons, but as to its exact location and what to do for it I was not so sure.

I took him to see our honored President, who suggested that owing to the slow progress of the appearance of the symptoms, which in-

volved first one group of muscles or organ, then another, that the lesion was probably a glioma. I took him to Johns Hopkins Hospital to see if Dr. Cushing could remove it. He was away on his vacation and we were delayed ten days in getting a consultation with him. Now the patient had to be carried on a cot.

Dr. Cushing kept him under observation in the Hopkins Hospital for two weeks, and wrote me he did not think it wise to operate. He had had a Wasserman made with negative results. He was brought home and died about a month afterward. I got out the brain and sent it to Dr. Cushing, who had a pathological examination made and confirmed the diagnosis of glioma.

One especially interesting point in this case was the power of the third nerve to produce action of the ciliary muscle and iris while the superior, inferior and internal recti supplied by the same nerve were paralyzed. This was because the tumor was located low down on the pons and affected the fibers of the nerve originating superficially and not those of the deep origin.

A lesson I learned was our utter helplessness to prevent the cutting short of the career of this useful and active man apparently in the prime of life and the head of a dependent family.

DISCUSSION.

Dr. E. Reid Russell, Asheville: There may be paralysis of one or more of the muscles and the main thing, of course, is to find out the cause, syphilis or what not. I do not think I have ever found that electricity or strychnine or anything of that kind did any good. My experience has been that where it is merely local paralysis prisms will work all right, if it is very low degree. I find the external rectus is more often affected than any other.

Dr. J. G. Murphy, Wilmington: I will just say a word and that is that my experience has been similar to Dr. Russell's. I said in my paper that I prescribed the universally recognized remedy, strychnia, but it has been my experience that it did no good in these cases.

DIAGNOSIS AND TREATMENT OF HYPOTHYROIDISM.

STUART MCGUIRE, M.D., RICHMOND, VA.

The thyroid gland is in many respects the most wonderful organ in the body. Through its internal secretion it influences the physical development of the child, and the psychic condition and mental activity of the adult. It regulates the growth of bone, the formation and distribution of fat, and the nutrition of the skin, teeth, hair, and nails. It plays an important part in menstruation and parturition, and has much to do with sexual desire and power. It influences the rate of the heart beat, the character of the peripheral circulation, and hence markedly affects the general blood pressure. It presides over the nitrogenous metabolism of the body and in other known and perhaps unsuspected ways plays an important part in the human economy.

Many theories have been advanced to explain the protean action of thyroid secretion, but at this time it is impossible to say which is the true one. Either as a neutralizer of endogenous toxins, or as a harmone stimulating other organs and tissues to activity, or by some other obscure but patent influence, it is the pacemaker for the body. Thyroid secretion seems to act as the gasoline for the human automobile. If the lever controlling its supply is advanced, then the engine races, the gears grind and the whole machine throbs and vibrates. If the lever is retarded then the engine knocks, the pistons hang, and the halting machinery momentarily threatens to come to a standstill.

If thyroid secretion is excessive there are symptoms of metabolic riot. Heat production and gaseous interchange are rapid. The body tissues are stimulated to a course of wasting dissipation. There are seen tremor, sweating, tachycardia, muscular weakness, loss of weight, and feverish mental activity.

If thyroid secretion is deficient the metabolism of the body is depressed, and heat production and gaseous interchange are at a low ebb. In the young, growth is lessened and the skeletal system is dwarfed. Connective tissue cells remain myxomatous. The skin is dry and thick and the hair is coarse and shows deficient nourishment. The nervous system halts in development and mentality does not rise above the level of the infant.

My interest in the thyroid gland was first attracted by the cases of exophthalmic goitre that came to me for surgical treatment. The symptoms in the advanced type of this disease were so dramatic, and the

results of operations directed to reducing the supply of thyroid secretion to the system so immediate and remarkable that I was tremendously impressed with the important role the thyroid gland played in the physiology of the human organism.

A study of hyperthyroidism as seen in exophthalmic goitre naturally led me to the study of hypothyroidism as seen in myxedema, and the increasing number of cases coming under my observation where the symptoms were demonstrated to be due to excess of thyroid activity led me to wonder if there were not an equal number of patients who suffered from symptoms due to deficient thyroid secretion.

A diagnostician will, of course, recognize at once a fully developed case of exophthalmic goitre with its staring eyes, bulging throat, tachycardia, tremor, sweating, nervous irritability and loss of weight; or a marked case of infantile myxedema such as has been so graphically described by Osler. The stunted stature and squat figure; the blubber lips, sunken nose, lolling tongue and half closed eyes; the expressionless face, thick skin and coarse hair make a picture that can not be mistaken.

But there are other cases where the symptoms due to perverted thyroid secretion are not so clear and well defined, and cases of mild hyperthyroidism have often been treated for hysteria or neurasthenia, and cases of mild hypothyroidism have often been treated for anemia or malaria.

Surgeons in recent years have learned to be constantly on the watch for symptoms of hyperthyroidism and many cases of the disease are diagnosticated and treated in the incipient stage; but physicians as a rule have not yet been trained to the same vigilance in the detection of the early symptoms of hypothyroidism, a condition of equal frequency and importance and one much more easily treated.

From observation and study I am satisfied there are a large number of patients who suffer from thyroid poverty and who drift from physician to physician without the cause of their symptoms being suspected.

A proper diagnosis in this class of cases must be based on a thorough knowledge of the physiological action of the thyroid gland, and a study of the symptoms that follow its perverted function. In doubtful cases thyroid extract may be given in small doses as a therapeutic test, and continued if it does good and discontinued if it does harm.

Thyroid extract should never be given in cases of heart lesions, albuminuria or glycosuria. In other cases, if it produces dizziness, intoxication or cardiac disturbances it need not be discontinued at once, as the untoward symptoms can be relieved by the administration of Fowl-

er's solution of arsenic. The dose of thyroid extract should be a small one, not over two grains three times a day, and the common mistake should not be made in acting on the belief that if a little is good more will be better. A small dose long continued is safer and more efficient than a large dose given for a short time. It must also be remembered that many of the thyroid preparations on the market are absolutely inert and the physician should either prescribe a standardized tablet made by a reliable house or else activate the tablet of unknown efficiency by combining with it several grains of iodide of soda.

Thyroid extract has been recommended as almost a specific in a long list of diseases, but the indiscriminate use of the drug is to be condemned, as large doses are dangerous and small doses frequently repeated may permanently impair the patient's health. It is a poison and should never be prescribed unless the case is kept under observation while it is being administered.

I would like to report a number of cases suffering from widely varying symptoms that I have treated and relieved by the use of thyroid extract, but the time at my disposal for the preparation of this paper has been too limited to allow me to look up their histories and records. I must content myself, therefore, in being suggestive rather than explicit, and simply state that I have personally found the substitution thyroid treatment of unquestioned benefit in selected cases embraced in the following heads:

1. Cretinism,
2. Myxedema (spontaneous and postoperative),
3. Parenchymatous goitre (especially in girls about the age of puberty),
4. Amenorrhœa and chlorosis,
5. Absence or failure of sexual desire or power,
6. Obesity,
7. Eczema of the dry or scaly type,
8. Delayed union of fractures,
9. Certain neuropathic conditions where the patient is apathetic and drowsy with slow pulse and cold skin.

DISCUSSION.

Dr. ————————: I feel that this subject is too important a one and that we owe too much to Dr. McGuire for his consideration of the invitation to visit our Society to let this matter pass without at least thanking him for this most excellent paper, that should be very helpful to us all.

I have had an opportunity of observing a number of these cases, one in particular that I wish to call your attention to. This was a case in which an old gentleman had received a fracture of the middle femur. This fracture had been properly reduced, and the patient put at rest, and he remained at rest for a period of about six weeks. After this period no union had taken place. Following this the bone was wired according to Lane's method and with Lane's splints and every antiseptic precaution was taken, not handling anything directly with the hands. Even with this there was no union of the bone. The patient was immediately started on thyroid extract, beginning with a half grain three times a day. A cast was placed on the limb at the same time. A skiagraph was taken some six months after this treatment had been instituted to observe a perfect union of the limb.

I just desire to relate this one case in order to bear out Dr. McGuire's statement regarding the delayed union of bones. Personally, I want to thank Dr. McGuire for this paper on hypothyroidism. I believe we have very many more cases than we recognize in our practice, and I believe in many of the cases where we find a very dry skin, with brittle, thickened or increased hair, that has lost its oily tint; in these cases thyroid extract will wonderfully benefit.

THE CONSERVATION OF NERVE AND MENTAL HEALTH.

J. Allison Hodges, M.D., Richmond, Va.

In plain and unvarnished language, Charles Wagner has told the story of "The Simple Life." In order to enforce its wholesome lessons his introductory chapter portrays not "the simple life," but, by contrast, a home scene familiar to all, with a bride-to-be in the midst of the difficulties and complexities of an approaching house wedding on the morrow.

The scene described in that classic masterpiece, its bustle and confusion, its work and worry, its hopes and disappointments, its nerve tension and distracted brain, is but a reflected picture in miniature of the life that we all lead today; a life far and away from "the simple life," but owing to the obligations and exactions of the times, it is the life that we must lead or be vanquished in the race for place and preferment.

Nowadays nothing is stable, nothing is steadfast, nothing is satisfying. The idol of yesterday is the memory of today, and the hope of tomorrow is the illusion of a phantasy. If, then, this be true, *is* it not

becoming; indeed, *is* it not necessary that we should doubly protect ourselves against the oncoming and everincreasing demands of that future that will surely tax our vital and mental energies to the utmost limit of endurance? For these reasons, I invite your consideration to my theme: "The Conservation of Nerve and Mental Health."

A proper conception of the necessity for attaining and preserving a better balanced nerve force and a higher mental development is denied most of us, because of our unfortunate ignorance regarding the true nature of the human mind.

Just as in ancient days, so also at the present, the average student following Plato's theory, either compares the mind and brain to a player with his musical instrument, or believing as Lucretius did, regards it as a musical box wound up for just so many years to play just so many tunes.

Either theory is as disappointing as it is erroneous, for the acceptance of either limits, in its fatalistic tendencies, the possibilities of mental development, for the human mind with its associated higher nerve centers is as capable of improvement as is the human body, and in this day of inspiring privilege it should be our task as well as our pleasure to see to it that the hygiene of the mind is as important and as much studied as the hygiene of the body.

Likewise, in this age of unrest, of striving after the unknown and the unseen; in this era of everchanging conditions, new forces in the material, moral and scientific world have been set to work, and to stem the tide counterforces of mind and body and soul must be evoked or man, time's noblest development, because of his mental frailty of purpose and will, must yield his dominion over all and lose forever his priceless heritage gained through all the struggles that have come and gone.

Never was the game of life so entrancing, never was the pride of ambition so enthralling, never was the path of victory so magnificent nor so fulfilling as the present, if we had but the nerve force and mental efficiency to endure the test and prove withal the victors.

Have we, though, that nerve and mental stamina that *can* withstand the demands of this day, and win the trophies of mind that will make us the victors of our unsurpassed opportunities? This the future alone must determine, and it behooves us, as medical men, having in mind and at heart the best interests of our race and profession, to see to it that in the midst of these abounding and ceaseless activities our children and our children's children are made strong in nerve and mind as well as

in body, to meet the rapidly increasing duties that all but overwhelm and envelop us and our institutions.

Great duties, as well as grave perils, demand full preparation and vigorous action, and surely no period of our history in the past, with all of its perplexing problems, has ever called for men and women more highly endowed or more mentally efficient for the battle that is to be waged than does the present, with its surging activities and boundless possibilities.

Prevention is the watchword of the modern world, and in order to preserve physical efficiency and prevent physical disease, and in a measure meet the exactions of the times, hygiene of the body has been studied and practiced to an extent, in recent years, that has been most commendable if not entirely warranted.

But this is not enough; it is not sufficient that one can do a day's work with vigor, and eat three meals a day with zest. The ox in the field can match such health—"the man with the hoe" can meet such conditions. Human health, mental health, goes beyond and above that; human beings have brains, and even the most robust physical health is not worth the having unless mental health—health of brain—goes with it, *pari passu.*

The general public has in recent times learned right well the problems of personal hygiene and physical exercise, as also the proper physical care of infants and children, and this lesson now learned, it is necessary that the problems of mental hygiene be understood and applied.

To this subject most people have never given a thought, and yet it is of paramount importance to us all—this question of conserving nerve and mental health and consequent well developed efficiency; your mental health and mine, and the mental health of our children.

To many it may come with the force of a new discovery that brains are not automatic machines or that human beings really have brains, but such is the fact, even if we appear oblivious to it, and consequently our mental as well as our physical health must be preserved and protected, so that we will think better, feel better and act better than we now do.

The preservation and improvement of our muscular structures, as important as it is, is not our whole duty. The modern trend seems to have gone far afield in this direction, for nowadays it is a fad to develop to the utmost every known form of muscular exercise. While this is healthful and, in a measure, invigorating to the entire system, yet it is not absolutely essential, except to the professional athlete. Indeed, it is more often indulged in to an excess that, instead of giving the hoped

for tonicity, produces an exhaustion which is harmful and enervating. Our muscles may be weak, and yet we can supplement this defect by the employment of another's strength.

Is this true, however, of a weak brain? If our brain is not so developed as to work with maximum efficiency, can we remedy the defect by employing someone to perform the work we can not do? Surely not, for weak brains put their possessors in the class of the hired, and the compensation is correspondingly small.

The matter of the difference between the constructive man of affairs and the hireling is but the difference of a few ounces of brain substance, but this difference is the potential that moves and nerves the world, and is never a drug in the open market.

Contrast, if you please, the numbers today who, in an earnest effort after health are religiously, if not scientifically, seeking by every method of physical exercise, such as golfing, tennis playing, gymnasium work, home exercises and the like, to develop and train their muscular systems, with that amazingly small number who are giving one single definite thought to the specific development of their brain power, and it is truly and surpassingly amazing! It is, of course, eminently true that health of muscle is helpful to the proper development of the brain, but it is equally true that physical health can do no more than provide the vehicle for the medicine or, to change the metaphor, prepare the soil for mental action.

A Sandow, perfect in personal beauty and faultless in physical perfection, may yet be a child in knowledge and an infant in brain development. Have you not seen such cases? And do you not turn away in aversion, if not disgust, at such a spectacle, be it man or woman?

Physical hygiene is but one factor in a perfect development, and to be effective must presuppose a mental hygiene, which is not only based upon physical training but includes also the training of the essential organs of observation, thinking and acting. A perfect physical form is rare, but a perfect mental form is even rarer. Physical prowess no longer conquers the conditions existent today; *that* age has passed, and a new era has dawned, calling more strongly and more urgently than ever before for stalwart men of brains. Today men are sought to fill the high places of power and position, not because of their brawn and muscle, but because of their capacities of brain and of mind; and neither are the golf score nor the size of the biceps the criterions of greatness or of usefulness, for many men of inferior physical development, who could have earned but a scant livelihood by their physical powers, have yet been able, by the force and activities of their brain, to transform the

intellectual viewpoint of Christendom. The perfect man, the great man, is he who can not only meet occasions, but make them.

Mental hygiene, then, not only includes physical hygiene but embraces much more, of which if in the past we have been oblivious, is not so much a sin of omission as of commission. Most of us have for ourselves and for our children a standard of physical health, a standard of moral living, and a standard of educational efficiency, but have we a standard of nerve and mental health that is personal and absolute?

For instance, how many of us have ever taken an inventory of our mental health, or our mental capacities, or that of our children? We accept the fact that we are endowed mentally by a beneficent Creator, but we seldom "take stock" of this best and highest gift that is our common heritage. We are careful at stated times to study and appraise the physical, moral and educational qualifications and development of ourselves and of our children, but we do not apply the tests which would inform us as to the proper status of our or their mental health. We do not stop in the onrush of life to even inquire if our mental efficiency is at par, or, generally, give a definite thought to the specific development of brain power. We may have noticed in an indefinite way that our memories are not as precise and retentive as they were formerly, that our capacity for concentration is not so marked and effective, that our initiative is weak, that our will power is vacillating, that our judgment is impaired, that our habits of thought are not logical, that our brains fag quickly and easily, that trifles become mountains of doubt and indecision, that worry begets emotionalism and finally disgust and despondency, and yet we have taken but scant notice of all these deteriorating conditions, which are but evidences, if we would but know and admit it, of the fact that our brains are slothful and are not the well ordered and well disciplined machines that they might be if properly conserved and carefully trained.

And why is this true? Simply because we have not understood, nor properly appreciated the fact that it is as important for us to train and develop our brains as our bodies, and further, because most of us have accepted our mental endowment as God's first and best gift, and have been supinely satisfied to add nothing to the equipment of His handiwork, even if we have been lavish in the expenditure of the substance of His beneficence.

In truth and in fact, many of us have never realized that mental hygiene and mind training are far more important than physical hygiene and body training, and that in the last analysis personal efficiency is really and truly mental proficiency, the foundation of all efficiency. If

it is scientifically true that every mental action has a physical substratum in the brain, then it is equally true that every perverted mental action is evidence of a perversion, however intangible, of the brain substance. Necessarily, then, the physical welfare of the brain is intimately and directly concerned in all questions of mental hygiene, and anything that affects the myriad specialized cells of thought must resultantly influence, favorably or unfavorably, the activity and healthy functionation of the mental organs, the basis of all power.

Conspicuously affecting the brain in a deteriorating and destructive way are three important conditions, viz.: vicious habits, injurious thought germs, and certain diseases. In speaking of the first, vicious habits, it is only necessary briefly to affirm what is familiar to you all, that habits may be either physical or mental; if physical, they may be a misfortune simply, but if mental they may be and are apt to be, indeed, a calamity, both physically and mentally.

As regards the second, injurious thought germs, it is only necessary to recall to your minds this era of germophobia in which we live, to emphasize the importance and benefits of the application of the germ theory to the present attainments and advancements in both medicine and surgery; but it may not be so obvious to you, if you have not considered this subject, why, if today we believe so firmly and so justly in that wise hygienic maxim, "clean out and clean up"—the best preventive germ theory ever enunciated—that we have not advanced one most important step farther and demanded that if this dictum be applied to our bodies it should also logically and hygienically be applied to our minds as well, if we would conserve perfect health. If the body can be destroyed by various disease germs, why can not the mind be polluted by injurious thought germs? If cleanliness is the preventive of the one, why not of the other? Evil thoughts, malicious intentions, perverted actions, abuse and misuse of intellectual activities can only be "swatted" out by good thoughts, instructive reading, informative culture and proper ambitions. We do not know, not one of us, the mighty force and magnificent power and possibilities that lie dormant in a healthy mind, for we seldom have it free from injurious and destructive thought germs.

As for the third general condition, various degenerative diseases which affect unfavorably the healthy action of the higher mental centers, those disease conditions such as the toxins of alcohol and syphilis, and the long and destructive chain of symptoms arising from cardio-vascular-renal diseases, are too well known by such a medical audience as this for me to dwell upon. It is but sufficient that I name them to

suggest to your minds a series of disease expressions, with whose realities and dire consequences to both mind and body you are no stranger but ever a sincere sympathizer, for no man living knows nor fears nor appreciates, as does the family physician, the possibility of seeing in those he loves a clinical picture of these fatal and deplorable mental maladies.

Look, for instance, at the destructive effects of alcohol and syphilis alone on our citizenship: Two hundred thousand individuals are today confined in institutions for the insane in the United States, at a cost of not less than $164,000,000—a sum greater than the value of our annual export of agricultural products, and this company of insane dependents is ever increasing. Fifty to seventy-five thousand of this number owe their condition, wholly or in part, to alcohol, and the proportion of cases in which specific disease ultimately has led to the same result is appallingly large. Probably the most accurate data regarding the proportion of the terminal form of the latter disease resulting in insanity, is obtainable from the statistics of the Austrian army, where the records covering a long term of years, and aggregating 41,000 cases, show that one in twenty are finally afflicted with general paralysis, or paresis, colloquially known as softening of the brain.

It must be remembered that these cases had been subjected to treatment or ordinarily the rate would have been proportionately higher, as, of course, it must be and is, in civil life. Owing, also, to the high pressure life of today, rapidly increasing disease due to heart and kidney complications in adults above forty-five years of age, is succinctly and forcibly illustrated in the recent report of a life insurance president, who says that during last year forty per cent of the mortality in his company was due to this class of disease. This is but in line with other statistics and forcibly and pertinently proves the fatal and increasing tendencies of the age which have to pay the penalty of the price of fast and furious living.

It is likewise true that, although the longevity of the race has increased within recent years, it has been, nevertheless, at the expense of adults past forty, and only because of the decrease in infant mortality during this time.

It is not within the province of this discussion to detail the treatment of those conditions which affect nerve and mental health, but it is certainly entirely obvious that if a course of treatment can be instituted to make the body efficient, one can likewise be devised for the mind, for the body is servant to the mind, as the mind may be, and should be, to the soul. Physical efficiency we now know is not mental efficiency, and our

object tonight has been rather to suggest that even while the average mind is a vastly more complicated affair than the average body, yet it is even more susceptible to culture and conservation. In these days, if we are to believe the journals, the American nation is rapidly approaching a state of physical efficiency of which the world has probably not seen the like since the days of historic Sparta, but I repeat, physical efficiency is not mental efficiency. This gigantic debauch of the muscles, which of late has crazed our country, must be arrested, and the mind must have its due share of attention and must be trained and the mental health of our citizenship be thus conserved.

Considering that mind governs everything in our world, that force has been singularly neglected and misunderstood. Even when tribute has been paid to its power, as I have said before, it has been regarded generally as a perfect gift from a most beneficent Creator, an intangible entity, as it were, unalterable and complete, a tool, mayhap, that could only be used if one happened luckily to be born with the genius to do so.

In the past, education in most schools has simply meant, in the main, that the faculties of memory and representation were developed, the one being often forced to the limit, and the other wrongly cultivated at the expense of the other faculties of the mind. This is not a real education, but simply "cramming" and "curling," to use college vernacular, and does not, except in a moderate sense, adequately develop the powers of thought or of self-control or of self-development. This, in fact, is not true education; it is only a fashionable faddism, catering to the whims and demands of a boastful and unlearned constituency.

The control of thought and its use to modify character already formed, to change even external surroundings, or at least their effect on self-development and thus bring about health, happiness and success, is the purpose of all well rounded and fully developed schemes of perfect education, and is the chief end sought in the conservation of nerve and mental health, nerve equipoise and mental efficiency.

The possibilities of thought training are infinite and its consequences eternal, and yet few realize that self-control and consequent self-development in mind and body is only mental control, pure and simple.

To acquire this direction of mind action is no intricate nor obscure affair. It requires neither hard study, much leisure nor book learning to accomplish. Every person will have a different task and different problems to solve, but like the sculptor, chisel in hand, with eyes steadfast and purpose strong, he must make every stroke count towards the final model of that ideal of loveliness fixed firmly in his mind and thus, with every thought a blow, forge out of his own life forces beauty,

harmony, happiness, and success. Nothing must be left to chance in this self-development by thought control, for the hands of a bungler may mar the loveliest statue or wreck the brightest life. To accomplish this practically our whole educational system must be revolutionized and we must no longer be bound "hand and foot" to system soaked schedules of the past in which personality is abased, if not wholly lost, and all alike are made to bow to the time honored and traditional scholarship schemes of high standards with "high averages."

This old mediæval idea is out of harmony with the practices of this twentieth century America, and I suspect there are few who would stand sponsor for this system which grips us and enthralls our children today and which, while all of us have conformed to, no publicist has ever been bold enough to defend.

Schools must no longer be regarded as only for the intellectually elect, where all knowledge is sorted into so called courses and where each child is at the mercy of a score of these knowledge specialists for a certain term of years, at the expiration of which service, if he or she has lasted, is at last graduated and tagged "Educated."

The children, and not certain prescribed courses, should be our most important consideration, and we should prefer maid to method, child to course, daughter to dogma, or in other words, the child first, the system last.

In short, then, if we would have healthful children, strong and virile in nerve and brain force, we must tear down our old methods of scholastic scholarship, which in school years often impose upon the child the strain of mature years, and often at twenty years of age commits a civic crime by turning youth into premature decay. To make healthy and successful men and women, I repeat that high averages in formal scholarship should be subordinated to the development of the capacity for happiness and interest in real life. If this were done, we physicians would have a far smaller number of neuropaths with whom to contend, and chorea, dementia precox, and a host of other nervous ills would appreciably diminish.

We owe no higher duty to ourselves and those about us than this, and if we but live up to our obligations reason will be enthroned in the citadel of every brain and will, with her obedient handmaidens of pure thoughts and strong wills, establish in every man a kingdom of right thinking, right acting, and right living.

To be specific, the conservation of nerve and mental health is an individual task and a personal duty, and in addition to what I have suggested as the individual's share in this work it should also be the

physician's privilege, as I am sure it will be his pleasure, to aid every patient to accomplish this laudable end. In my opinion this can be best effected by having patients look to their physicians in a new light, namely, as medical appraisers, or preventive officers, and at certain climacteric or critical periods of life, say from three to five, from thirteen to fifteen, and from forty to forty-five years of age, allow them to take an inventory, as it were, of themselves, of their predispositions to disease, and their present standard of health, as well as of their psychic and nerve states, so as to improve, protect and conserve their physical and mental activities. By this means and our present day methods of exactness and precision in diagnosis and prognosis, the tendencies to a nervous collapse could be foreseen in time and properly estimated, and the tendencies to a physical deterioration, with resultant mental disorders, could be considered, and if any of these should be threatening or imminent preventive or curative measures could be instituted.

I am aware that this method may appear didactic and idealistic, but it is possible, and it is feasible and it is coming. In many of the schools, already, medical inspectors have assumed and performed the duties that careless and unthinking guardians and parents have shirked and would not undertake, and the beneficial results have even now been more than could have been naturally expected.

As an additional aid in the conservation of mental health, sexual hygiene should be taught by parents to their children, and the marriage laws of today should be changed and regulated, for, without attempting to discuss or advocate any ideal method which at the present time might, indeed, appear Utopian, it is sufficient to affirm, all other conditions disregarded, that neurotic parents are most deplorable educators, and this today is one of the most potent factors favoring a possible decadence of the race. We need sane men in these days of hysteria and faddism. Physicians, the men behind the guns, need, also, education, enlightenment and encouragement to enforce these requirements.

In this as in many other conditions which influence nerve and mental health, want of knowledge on the part of the patient is the real and everpresent need, and it is for this reason that I would appeal to every faithful and highminded physician, who prizes service above savings, and love of his fellow man above love of the almighty dollar, to assume now the office of teacher and trainer, as well as of physician and priest, and charge for these preventive measures as well as for his curative methods, for out of the wealth of the abundance of his knowledge and experience and skill, he can, by illustrating and practicing in his daily life the old maxim, *Mens sana in corpore sano*, save and strengthen for

God's glory and service some one of His feeble and nerve wrecked weaklings, and thus by conserving another's mental health add his ministering mite to the sum total of human health and happiness.

DISCUSSION.

Dr. John Hay Williams, Asheville: I am extremely glad to have heard this immensely interesting paper of Dr. Hodges. It is a question that is agitating the school board of Asheville today. The matter of individualism of the children of the schools, of endeavoring to instruct the teachers and the principals of our schools in the most practical and best manner and method of bringing out the individuality of each child, separating the children into classes, so that the child can be reached. The psychic investigation of the capacity of the children is being urged upon the teachers of the schools, and they are requested and even required to make a special study of these methods and to refer any questions they may be in doubt about in any way, not only to the physicians who happen to be on the school board but to their own physicians, to get at the very best manner and method of dealing with the individual mentalities of every child, with the idea of conserving and developing the very best mental force in that child. At the same time we are endeavoring to keep up to the highest possible standard the physical excellence of each child, male and female, and before very long, I believe at the next meeting, I will have the pleasure of reading before this Society a paper on that very line—the proper application of the tremendous ideas presented to us tonight by Dr. Hodges. I thank the Doctor exceedingly. He has given me great inspiration. At the same time I would like to say to the doctor that the question of eugenics will enter largely into this matter. The question of eugenics and the questions of sexual hygiene and sexual knowledge must be brought out in such a way that they can be presented to the children in our schools, so as to bring home the truths they ought to know, and in such a way that it will not shock the modesty of any child or instill any prurient ideas. We know that it is a tremendous task. We know that the parents neglect it, and that in the majority of cases our teachers stand in *loco parentis* to the students in our schools.

OPHTHALMIA NEONATORUM.

Mr. John E. Ray, Raleigh, N. C.

I need not tell you that I feel embarrassed in this presence. I believe I am the only layman who is here, certainly the only layman whose name I have noticed on the program. I will state in the beginning that I am not here to give you instruction nor to give you information, for you know far better than I do the inwardness of the discussion which is before us at this moment. You know very much more about its causes than I do. You know a great deal more about its prevention than I do. I come then simply by way of stirring up your minds by way of remembrance, and with just one plea for your interest in behalf of the class of children to whose betterment and education I have given my life. If I were speaking to a mixed audience I would explain the meaning of my subject. It is superfluous in your presence. My hope is simply to call your attention to the prevalence of this disease, causing blindness in so many instances, and to ask you to do everything you can in the way of prevention, which the speaker preceding me, Dr. Hodges, emphasized as the watchword. I have jotted down just a few statistics to which I wish to call attention. In 1900 the statistics of the United States Government showed that there were 85.2 blind persons to every 100,000 of the population, 62,453 blind persons in the United States over ten years of age, approximately 100,000 blind persons, men, women, and children, in this country of ours. The appalling part of it is that at least one-fourth of these 100,000 people ought never to have been blind, and would not have been blind if proper preventive measures had been taken when they were infants, within just a few hours after birth. I need not tell you that one can not be too prompt in the application of the remedy, the preventive. I was told only a year ago at your meeting at Hendersonville, by one of the leading physicians of our State, of a case of an infant afflicted in this way because of the disease. They applied vigorously the remedy for the disease, but it was not effective and the child lost the sight of both eyes absolutely. I learned upon questioning that the application was not made within twenty-four hours after the birth of the child and therefore the sight of the child was lost.

I read a statement by an expert, Dr. Loeb, of St. Louis, a few days ago to the effect that the one reason why the world is not full of blind people is that the children of blind parents very frequently die young. I do not know whether or not this is an exaggerated statement of the condition of affairs. I rather suspect it is. At any rate when we

consider the fact that in this country of ours from 20,000 to 25,000 people go groping their way in total darkness when they would not have been blind if the proper measures had been applied in infancy, the thought appalls us.

There is a great deal of blindness which is hereditary, not a very large proportion, but a large enough proportion to require and demand our consideration. I read a short time ago of a family in which there was hereditary blindness, which family had been traced through ten generations, and 1,800 offspring were the result of the marriage and intermarriage of the members of this family. I do not know what should be done in regard to the marriage and intermarriage of blind people. In our school at Raleigh most strenuous efforts are put forth to prevent anything of the kind, but it frequently comes about.

In just a few words I want to give you a few statistics from our own State. In the school at Raleigh for two years North Carolina has had the largest school for the education of the blind of any State in the Union, not because there are more blind children in North Carolina in proportion to the population, but because more vigorous efforts have been put forth to secure the attendance of these children at Raleigh, and because in some of the States of larger population there are two schools for the blind, instead of one.

We have had during the past two years in our school more than three hundred blind children, and I have in my possession information in regard to more than one hundred others, making more than four hundred blind persons of school age in North Carolina. If that be true, and if statistics throughout the land are to be relied upon, that one-fourth of all blindness is due to one disease, then at least one hundred of the school children of North Carolina are needlessly blind, and would not be blind if somebody had performed a duty at the proper time. Who is responsible? I grant you that in most cases blindness comes from the humblest hovels, from the humblest homes in our land—as a rule. You know this to be a fact. And yet there ought to be some means by which it might be possible for us to relieve the situation and to get some law passed similar to those passed in other States of the Union, requiring the application of the prophylactic within twenty-four hours after the birth of the child, within twelve hours, if possible.

Just one thing more: You gentlemen know just as well as I do that medical science has provided this prophylactic in such form that it can be shipped all over the United States in little receptacles containing one or two little ampules costing ten cents for the little receptacles, these receptacles returnable to the manufacturer. All are numbered and

dated, so that the fluid may be returned to the producer if not used within a certain time and exchanged for fresh and new. The cost is only ten cents per package of two ampules and each ampule contains enough of the medicine to prevent any child from becoming blind from this awful disease. Now, if the doctors and the midwives could possibly help in the distribution of information in regard to this matter, and if physicians and midwives could be required to apply this remedy, what would be the result in North Carolina? With 2,250,000 people in North Carolina, taking the statistics I quoted a few minutes ago as standard, there are 1,917 blind persons in this State groping their way in darkness through our land, a great many, hundreds of them, I am glad to say, seeking to sustain themselves; others paupers, dependent upon their communities or their relatives. Of this number there are 479 people in North Carolina who never would have been blind if proper attention had been given in infancy.

I want to tell the Society incidentally this one thing: I said a moment ago something of the large number in attendance at our school. We seek to instill into the hearts and minds of the boys and girls that they must make a living for themselves, and eighty-five per cent of our gradutes are making an honest living for themselves and their families.

I am profoundly grateful to you for this courtesy and for this distinguished honor you have shown me, and our school, as its servant. I thank you.

DISCUSSION.

Dr. G. L. Sikes, Salemburg: I am fully in sympathy with the application of this remedy as a preventive of ophthalmia neonatorum. In the discussion of this paper I want to point out in some way how we can apply this remedy. In my particular section I must say that ninety per cent of the births are attended by midwives, who could not know about this remedy and could not be made to apply it unless there was a policeman standing by to make them use the remedy. How to get them to apply the remedy is the question.

There is another question about this infantile blindness and the cause I would like to have explained, and that is in regard to the colored race. We all know that this disease which causes ophthalmia neonatorum is more prevalent among the negro race than it is among the white, at least this is the case in my section, by ten to one, and yet the blind children are just the reverse; I can name ten blind white children to one blind negro in my section.

In my practice I do not know that there have ever been but two blind children, and these are particularly interesting to me. I have attended

this particular mother at the birth of four children. She is the wife of two brothers. She raised seven children by the first, and has been the mother of five by the second husband. The first child sees as well as anybody; so far as I know there is nothing wrong with his eyesight. The next two births were blind and the children died in a marasmic condition at about four months old. I studied the case, and it seemed to be from an hereditary cause. There seemed to be blindness in the family. I decided to try a specific remedy, so in the third pregnancy I saturated this mother's system with a specific remedy, iodide of potassium. This third child was born with good eyesight, but died in a marasmic condition. I decided that there must be something wrong with the mother's milk, so at the birth of the fourth child I decided not to let the mother nurse the child. This child was born with good eyesight. The child was fed on artificial food under as good hygienic conditions as possible, but it died in about four months in a marasmic condition. The blindness of these children was not blindness from ophthalmia neonatorum.

Mr. John E. Ray: I would like to say in reply to the doctor that there are more blind negroes than white children; not very many more, because blindness usually comes from the class of society in which we expect to find the disease which the profession, I think, has recognized as the particular cause of ophthalmia neonatorum.

THE CEREBRAL FORM OF PERNICIOUS MALARIA.

J. F. Patterson, M.D., New Bern, N. C.

In selecting cerebral malaria as the subject for this paper I chose a disease which has been of very great interest to me, one that is far more prevalent than supposed, and one that is the unrecognized cause of many fatal cases of coma. Cerebral malaria was discussed quite freely during the last annual meeting of the Southern Medical Association held in Jacksonville, Florida, last November, and it was recognized to be a subject of vital importance and of great interest because of its diversified symptoms and its usual quick response to quinine medication.

Cerebral malaria is a form of pernicious malaria; the etiological factor being the æstivo-autumnal parasite, that is the crescent forming hæmomeba. The fevers caused by the æstivo-autumnal parasite are characterized by some main group of symptoms depending upon which

organ of the body participates mostly in the infection, in other words upon which organ is affected; for the malarial parasite of this type can attack any organ in the body and give rise to symptoms characteristic of involvement of that particular organ; for example, if the liver is involved we have bilious symptoms; if the brain, cerebral symptoms, and so on. This is the most important point to remember, for we can readily see that pernicious malaria may simulate any disease, and lends emphasis to the necessity of a blood examination for the malarial parasite in all cases in which the diagnosis is obscure.

The symptomatology of cerebral malaria is most varied and complex —the disease may simulate any organic disease of the brain and in some cases the resemblance is so exact that the proper diagnosis rests upon the blood examination. As a rule the clinical picture is dominated by a well defined group of symptoms and upon this basis we may divide cerebral malaria into the following types:

(1) Comatose.
(2) Motor Irritative.
(3) Motor Depressive.

Coma is a symptom of all the types, the associated symptoms varying with the different types. As a rule cerebral malaria does not occur with the first paroxysm but is preceded by several. Its onset is always sudden, occurring with startling swiftness.

COMATOSE TYPE.

This is by far the most frequent—the coma is the cardinal symptom; it may be of varying duration and intensity; it may last a few hours or several days; as a rule it is quite pronounced, there being no response to stimulation. A characteristic of the coma is fibrillary twitching of the muscles of the extremities—the eyes are closed, lids being resistant to elevation, eyeballs rotated upward, pupils equal, usually dilated but may be contracted; the pulse may be either fast or slow; respirations as a rule being stertorous but in some cases shallow and rapid. The temperature is high, varying between 103°F. and 105°F. The coma usually subsides with diaphoresis, but in some cases it does not; instead becoming more pronounced until death, which usually results from pulmonary œdema.

The following case well illustrates the comatose type:

Case 1.—Mrs. X, age 53, was seen at 7 p. m. on the night of October 9th; she was in a profound coma, respirations 25 and stertorous! pulse 140 and weak, skin ashy in color and dry, eyes closed, slightly dilated and reacting to

light; temperature by rectum was 103°F. The coma was profound, she not responding to any form of stimulation.

The following history was obtained from relatives:

For the past six weeks she had been ill, first suffering from gallstones, and for the past two weeks had been treated by an osteopath, a diagnosis of nephritis having been made by him. Upon close questioning it was learned that upon alternating days she had been having a feeling of coolness followed by nausea, vomiting and an elevation of temperature,—upon diaphoresis the symptoms subsided, undoubtedly being malarial paroxysms which were unrecognized. At noon the day that I was called to see her she had another of these paroxysms, soon after became unconscious, the coma being quite profound when I saw her at 7 p. m. A specimen of urine obtained by catheterization showed the findings of a febrile albuminuria, there being a slight amount of albumin and no casts. A blood examination revealed numerous malarial parasites of the æstivo-autumnal form, most of them being extracorpuscular.

At 5 p. m. she was given hypodermically 12 grains of bimuriate of quinine and urea, also 1-40 grain of strychnine; at 11 p. m. 6 grains more of quinine hypodermically was given; at midnight she showed signs of regaining consciousness; at 1 a. m. she had completely aroused and the convalescence from then on was uneventful, there being no return of symptoms. Her treatment consisted of 6 grains of quinine hypodermically every three hours for seventy-two hours, and calomel grains 20 the first twenty-four hours; the remainder of the treatment consisting of tonics.

This case was very interesting because it closely resembled uremia, the differentiation being based upon (1) urinary findings, (2) blood examination, (3) history of previous malarial paroxysm, (4) pupils being dilated.

MOTOR IRRITATIVE TYPE.

While the motor symptoms predominate coma is also a symptom. The motor symptoms may vary from twitching of the muscles to clonic convulsions and may simulate uremia, hysteria or tetanus. The following case so closely resembles hysteria that at first that diagnosis was made:

Case 2.—Mrs. B.'s house girl, a negress about twenty-one years of age, was found unconscious in the living room, where a few minutes before she had gone to do housework. When I arrived, the girl was lying on the floor, profoundly unconscious, muscles rigid, eyes closed, lids resistant to opening, pupils dilated but responsive, pulse 120. The least stimulation of the skin caused clonic convulsions, each convulsion lasting from five to twenty seconds. No history was obtainable; she was removed to the hospital. It was impossible to take temperature by mouth or rectum because of the clonic and tonic spasms; for the same reason attempts at catheterization were a failure. Morphia ¼ grain was given hypodermically and during the night ½ grain more was given because of the continuance of the motor symptoms. Her condition remained the same until the following afternoon at 5 p. m., when she became somewhat relaxed. Her temperature was then taken by rectum and found to be 102 2-5°F.; pulse 140, weak and intermittent; a blood exami-

nation revealed the æstivoautumnal parasite, and her condition was now recognized as cerebral malaria. At 6 p. m. she was given 12 grains of quinine hypodermically and thereafter 9 grains every four hours; oleum tiglii 4 drops also was given. The following morning she aroused from the coma—the temperature was normal; and upon questioning her she stated that she had been having chills for the previous two weeks. She made a rapid and uneventful recovery.

MOTOR DEPRESSIVE TYPE.

This form may present paralysis of the monoplegic, paraplegic or hemiplegic type—the paralysis usually commences and subsides with the paroxysm. This form of cerebral malaria is extremely rare and very few cases have been reported. Landouzy states that he has only been able to collect twelve cases in all literature. The following case is of the hemiplegic type—the hemiplegia lasting for forty-eight hours.

CASE 3.—Mrs. P., age 65, an unusually well preserved and active woman, had a chill on June 12th, another on June 14th. I saw her on this day. She responded to treatment and was afebrile on the 15th, but next day at noon she had her third chill; at 4 p. m., when I saw her, the temperature was 103°F., pulse 90 and full; she was confused, speech was thick and slurring; by 8 p. m. she was profoundly comatose and there was complete flaccid paralysis of the right side of face and body, with exaggerated knee jerk on the right side; breathing was stertorous and 18 per minute; pulse bounding and 74; eyes closed, pupils contracted, no reaction to light, eyeballs deviated toward the left; rectal temperature 104 1-5°F. A blood examination revealed malarial plasmodia. Quinine 6 grains was given hypodermically every four hours. The following day her condition was practically the same, but by night she had responded slightly from coma, her paralysis gradually subsided, and forty-eight hours after onset it had completely disappeared, reflexes being same on both sides. The quinine was continued hypodermically for four days. Mental confusion remained for four weeks.

This was a most interesting case and the diagnosis rested between cerebral malaria and cerebral hemorrhage due to rupture of a vessel as a result of the elevation of blood pressure produced by the paroxysm. The rapid response to quinine and complete disappearance of the hemiplegia in forty-eight hours, there being absolutely no sequelæ, showing conclusively that the case was cerebral malaria.

In the majority of cases all mental symptoms disappear with the subsidence of the paroxysm; but in a few symptoms of confusion remain for some time. In the case reported above, symptoms of confusion remained for four weeks. At the last meeting of the Southern Medical Association, Dr. L. A. Green, of Jacksonville, Florida, stated that the records of the State Hospital of Florida show a number of cases admitted as insane that were due to cerebral malaria and which responded to quinine medication. This I readily believe, for I was so fortunate

as to see, in consultation with Dr. R. D. V. Jones, of New Bern, N. C., a case of cerebral malaria in which symptoms of confusion lasted for over two months. This patient had hallucinations of sight and hearing and illusions of the same senses and at times was in a state of grandeur. So it should be recognized in malarial districts that cerebral malaria is a possible etiological factor in all acute mental conditions.

In conclusion I wish to lay emphasis on the following points:

(1) Cerebral malaria may assume the form of any brain disease.

(2) That it is practically never due to the first paroxysm, but to succeeding ones, and by energetic treatment of the first paroxysm it may be prevented.

(3) The specific action of quinine hypodermically and that the drug must be given for effect—the dose usually being 9 to 12 grains every four hours.

(4) That cerebral malaria is a frequent disease in malarial districts.

HEMOGLOBINURIA.

Geo. E. Kornegay, M.D., Kinston, N. C.

I am on the program for an article on hemorrhagic fever; I wish to correct this. The subject of my paper is Hemoglobinuria, though the condition I wish to discuss enjoys a wide variety of names, such as hemorrhagic fever, malarial hematuria, swamp fever, blackwater fever, and bilious fever.

If I were asked to give the etiology of hemoglobinuria in one word I would say malaria. There are, of course, other conditions in which hemoglobinuria may occur. We see it in typhoid, rheumatism, acute articular rheumatism, leukemia, pneumonia, streptococcus infection, and a host of other diseases; we see it sometimes after an injection of tuberculin, poisoning with acids, illuminating gases and snake venom. It is quite a common symptom of Texas fever in cattle. It is seen often after infecting dogs or sheep with hematozoa, but etiologically hemoglobinuria stands in relation to malaria as do tabes and dementia paralytica to syphilis.

In America I think I can safely say that it is a disease of the white race. During five and a half years in a country where the disease is endemic I have seen no negro patients. And the greatest authority on the disease in this country only reports two cases in pure negroes.

Men are more susceptible than women. I only record one case in a female, and in this case no blood examination was made and it was

further complicated by pregnancy. I attribute the seeming freedom of the female from this condition to the fact that she is less exposed and takes better care of her health, and usually follows the physician's directions. It is rarely seen in children, due, I think, to the care that is given them by their parents. I recall but one case, that of a child of six years old, a typical strumous diathesis.

August, September and October are the months we see most of our hemoglobinuria. A neglected malaria during the summer months, the patient's system no longer able to stand the inroads of the parasite and at the same time furnish vitality. A patient who has one attack is usually prone to another, showing there is no immunity.

How long can a person live in a locality where this disease is endemic? McElroy observed in fifty cases in the Mississippi Valley the following: Two in the first year, three in the second year, six between the second and fifth year, twenty-three between the fifth and tenth year, eleven between the tenth and twelfth year, and five after twenty years.

It is essentially a disease of the lowlands, or rather where the mosquito makes her home. Cases recorded in higher altitudes usually give a history of a visit or residence in a malarial country.

Occupation in which the laborer is working where mosquitoes breed, such as ditching, cutting grass, railroad work, plowing all must be considered predisposing causes.

Favorable to my argument that this disease can be traced to the malarial plasmodia, consider the geographical distribution, the length of residence in endemic regions, a history of previous attacks of malaria, malarial prophylaxis is prophylactic of hemaglobinuria, and the blood findings, parasites in nearly all cases if examination is made early enough, pimented leucocytes, mononuclear leucocytosis.

To show the results of the blood findings I quote the following table. I will mention first the number of blood examinations made, then the number in which parasites were found:

	Blood Examinations.	*Parasites.*
Kanellis	20	10
Bignami and Bastianelli	2	1
Vincent	1	1
Dryepondt and Vancanpenhout	1	0
Powell	11	5
Koch	16	2
Hanley	13	0
Cardamatis	25	4
Burns	3	3
Boisson	16	4
Wellman	1	1

	Blood Examinations.	Parasites.
Crosse	1	1
Brem	14	2
Krauss	11	7
McElroy	23	9
Thin	1	0
F. Plehn	33	22
Borden	20	6
Bernardo	20	17
Da Costa	20	15
Grattan	11	4
Goltman and Krauss	12	4

Stephen and Christopher found the parasite in 95% of their cases where the blood examination was made the day before the attack, 70% on the day of the attack and 20% on the day after the attack. Mannaberg demonstrated the parasite in 95.6% of his cases the day before the attack, 63% the day of the attack and 17% the day after the attack. In thirty-two cases I have treated I have been able to find the parasite during the first day of the attack.

The findings of these men would show that the failure to find the parasite is due to late examination. Most of the patients have been taking quinine for a long time before the attack, which would lessen the chances of finding them, and the great destruction of the red cells in which the parasite are contained. The last quoted table would show that where the examination is made early we find the parasite.

The Symptoms:

This condition is the result of several attacks of malaria in the form of chills or there may be a prodrome of weeks or months consisting of general malaise, patient feels bad, suffers with frequent and severe headaches, pain in abdomen and in lower limbs, often mistaken for rheumatism.

Usually after a severe chill the patient is frightened by a copious discharge of red or black frothy urine. Pain over abdomen is marked, more especially over the spleen. Nausea is a constant symptom and bile forms the major portion of the vomited matter.

Palpation and percussion reveal tenderness over the abdominal area with tymphanitis and enlargement of the liver and spleen. The latter is always enormously enlarged. Icterus is usually pronounced in a few hours, though I remember a case that showed a marked icterus for several weeks before the hemoglobinuria.

The laity look with horror on this condition. The fear is well pictured on the patient's face. The anxious expression, the dilated pupils,

injected conjunctiva and yellowish green complexion make a ghastly photograph. The respiration resembles that of an exhausted dog. The patient is restless, thirsty and nauseated, but afraid to drink for fear of vomiting.

In mild attacks vomiting ceases with the decline of the fever, pain is allayed and the urine clears up. The jaundice may last for several days, and in the eyes for weeks.

In violent cases the fever never goes to normal, due I believe to auto-intoxication rather than to the malaria. The vomiting is so severe that it is hard to nourish or give medicine by mouth. I have never seen a case where the vomiting came every ten or fifteen minutes regularly. Paroxysms may develop every day, twice a day or every other day, and not at all in harmony with the cycle of sporulation of the malaria plasmodia. In my cases the paroxysm is always followed by a discharge of bloody urine, nor is it confined to the urinary tract, but from the stomach, bowels, and nose. After each paroxysm the prostration is more profound, the respiration and pulse more rapid and weaker.

The fever chart presents nothing interesting; it may be remittent, intermittent or very irregular. With every paroxysm there is a rise of fever, and the fever usually outlasts the hemoglobinuria.

The urine may be normal in amount, increased or diminished, or we may have suppression. Suppression is due to the plugging of the renal tubules and to diminution of blood pressure. It is a peculiar fact that suppression cases usually start as such, though any case may be one of anuria if not treated properly. One symptom that is always present in suppression cases is colic, resembling renal colic. This warn-it comes several hours before suppression. Very few suppression cases get well.

Urine:

The sp. gr. of the urine varies between 1008 and 1035. In color it ranges from light yellow to glistening black. It is rich in albumin, and this may be found for a little while after an attack. Serum albumin, albumose, globulin, and nucleoalbumin are present. Peptone and propeptone have been found. The urine is very frothy, it is sometimes yellow, but more often greenish in color. The coloring matter is more often in the form of methemaglobin, though oxyhemaglobin is found. Stephen and Christopher observed that black water urine made alkaline with potash and then boiled produced a purple color giving the bands of hemochromogen, showing that the urine contained reducing bodies. Bile is usually absent and is never present in proportion to the poly-

cholia. According to Deaderick urobilin is very common. Stephen and Christopher state that it sometimes appears before an attack, but usually after the oxyhemaglobin has disappeared. Quinine in the urine is a question undecided, though according to Schaumann, he found that quinine excreted with the urine during an attack to be somewhat larger.

Microscopically the field is one of brown detritus, the products of broken down red blood corpuscles. Whole blood cells are not generally found, casts, granular, hyaline and epithelial, usually covered with granular pigment, are numerous.

The blood picture shows macrocytes, poikilocytes, polychromatophiles and basophiles. Nucleated red cells may be found. Half of the red cells are sometimes destroyed in a few hours. The amount of hemaglobin is in harmony with the red cells present, and is reduced from 25 to 50 per cent according to the destruction of red cells. During pyrexia there is a decided increase in polymorphonuclear cells. With the decline of the fever we have an increase of large mononuclear cells. The differential count shows an increase in large mononuclear and a decrease in small mononuclear, with a little increase in polymorphonuclear cells.

Treatment:

The treatment, especially the use of quinine, is a much discussed one. To be an advocate of quinine or not to be. That is the question.

Mannaberg says: (1) When, without quinine preceding, hemoglobinuria occurs and the blood examination shows the presence of the parasite, quinine is indicated.

(2) When the hemoglobinuria occurs after one dose of quinine, while the history shows that the patient previously took quinine without bad effect, and the parasites are present, quinine is to be exhibited. If the paroxysm of hemoglobinuria should follow within a few hours repetition of the drug should be dependent upon whether or not the parasites have in great part disappeared. In the former case the quinine may be stopped, at least for a time. But if the blood shows that the malarial parasites have increased in number the quinine is to be continued.

(3) When the history shows that the patient suffered previously from hemoglobinuria following quinine and the blood examination is negative quinine is to be absolutely avoided.

(4) When the case manifests a severe malarial infection and at the same time an assured intolerance to quinine in the shape of hemoglobinuria the decision is very difficult.

Marchiafave and Bignami believe that quinine should not be given unless the blood examination shows the parasite.

Bastianelli's advice is, "If hemoglobinuria occurs during a malarial paroxysm and parasites are found in the blood quinine should be given, if parasites are not found it should not be given, and if quinine has already been given before the hemoglobinuria has appeared and no parasites are found, its use should be suspended, but if parasites persist it should be continued."

Thayer says, "If the attack occurs spontaneously with a malarial paroxysm, the blood showing the presence of parasites, quinine should be given hypodermically.

"If the parasites have disappeared, either as a result of the paroxysm itself or doses of quinine already given, it may be as well to abstain, at least for a time, from the administration of the drug. It can not ameliorate the further cause of the paroxysm, and the possibility, if it has already been given, that the symptoms may be due in part to quinine may be thought of.

"If an attack arise in the middle of an ordinary malarial infection, after taking quinine, it is best to abstain, for a time, at any rate, from further use of the drug. That which has been given may have been enough to control the affection.

"If, however, in an attack coming on after quinine, the parasites continue to develop, quinine should be given, despite the slight possibility of its injurious action. The danger from further development of the parasites is probably the greater.

Vedy says, "If living parasites (not merely evidence of their former existence, pigment) are detected twenty-four hours after the beginning of an attack quinine should be given

"If the parasites are not visible do not administer the quinine. If in doubt, that is to say, if the microscopic examination of the blood cannot be made, do not give quinine.

The physician called to see a case of hemoglobinuria confronts as to treatment a serious problem. The patient's life may be endangered by a single dose, and again, on account of the increasing infection, he is sure to die if it is not given.

I would give quinine regardless of blood findings if there was enlargement of the spleen to any great extent. I have treated thirty-two cases and I have always found the parasite, but where there is no intolerance to quinine I believe that it is wise to administer it hypodermically regardless of the blood findings, for the plasmodia is there, every symptom denotes it, and while blood findings may not demonstrate it, blood from the spleen will surely demonstrate it.

Your greatest danger lies in the persistent vomiting and suppression.

I am positive that a good many suppression cases are due to the use of ergot, turpentine, gallic acid and a host of substitutes for quinine and hæmostatics. The first and greatest principle in the treatment is to keep your patient quiet. To do this you must forbid all visitors and keep patient under the influence of opium. You will be surprised with the results of 1-16 gr. morphine every three hours and you will avoid shock and suppression, for it has been shown by Phelgn that moving about and restlessness on part of the patient will cause suppression.

The bowels should be kept moving gently, and for this purpose small doses of calomel frequently repeated possess decided advantages. The use of heroic doses of calomel does more harm than good, and salivation is sure to result.

Quennec's chloroform treatment is highly recommended. The author claims that it will control vomiting, increase the output of urine and diminish the albuminuria. I have tried this treatment on several cases, and I find that the continued administration is dangerous, it depresses the heart, acts as a decided irritant to the kidneys and lowers blood pressure. The formula is chloroform 6 gm., gum arabic 8 gm., sweetened water 250 gm. This amount is used daily, a sip taken every ten minutes.

Cardamatis treatment consists of giving either in sweetened water, one teaspoonful at a dose every three hours. This dose is too large, but by giving smaller doses I have been able to strengthen the pulse, relieve precordial anxiety, dyspnea and vomiting and provoke a profuse diuresis.

I am tempted to say that every case should be given intravenous saline injections. The vomiting can be controlled by sponging with ice and mustard plasters over the epigastrium. Heart stimulants must be given as needed; of these strophanthus gives the best results.

Nourishment is most essential. If the nausea does not prevent I give glass of milk with white of egg every two hours. If nausea is severe it is best to give white of egg with lemon juice and cracked ice. Immediately after giving nourishment sponge with ice and vomiting will be controlled.

Quinine should be given hypodermically every four hours for at least three days and always guard it with morphine. Ten grains of quinine with one-eighth to one-sixteenth morphine is sufficient.

DISCUSSION.

Dr. Cyrus Thompson called upon to discuss these papers.

Dr. Thompson: I had thought Dr. Brown, of Scott's Hill, would be here and present his paper and then general discussion might begin. There are other gentlemen who have had quite as much experience with hemorrhagic fever as I have had and who are perhaps more capable of discussing it than I.

The only question that could be a matter of serious discussion is whether or not hemorrhagic fever is a malarial manifestation or a non-malarial manifestation. I have reviewed the literature in the last month or two, and have studied the question over and over again, and so far as the literature goes, up to the month of April this year it does not prove certainly that hemorrhagic fever is a separate and distinct entity from malaria. The general consensus of opinion, and my own opinion, gathered out of my experience with the malady and the history of the cases in my practice in whom the disorder has occurred, is that hemorrhagic fever is a late malarial manifestation. It may be caused by the malignant tertian parasite which may not show itself in the peripheral blood. The whole preponderance of evidence goes to mark it as a manifestation of chronic malaria. In other words, I do not think any man in this eastern country ever saw a case of hemorrhagic fever occurring in an individual who had not had previous and repeated attacks of malaria. It does not do to say that the attacks have not occurred previously because the man has not taken to his bed before this time. The truth is that hemorrhagic fever occurs as a manifestation of chronic malaria, and chronic malaria of the indefinite, subacute type that does not force a man to go to bed and take enough quinine to break it up. He has just a slight attack, and recurrence of these slight attacks, until late in the season he comes down with the destruction of his red blood and you have the hemoglobinuria, and shortly after a funeral. In a great many cases malaria sufficiently treated does not go on to hemorrhagic fever. If this is the truth, it is worth while to consider what is the best treatment of the disorder. The treatment is preventive, and only preventive at the best. It may be put down as one of the most preventable diseases with which we have to contend, and it is also one of the most destructive and intractable. If you will act upon what I have suggested you will never have a case of hemorrhagic fever. Time forbids my further discussion of this matter, although there are phases of the attack well worthy of consideration.

DISEASES DUE TO FAULTY NUTRITION, WITH ESPECIAL REFERENCE TO DIARRHEA.

Guy Smyth Kirby, M.D., Marion, N. C.

Of the numerous diseases caused by faulty nutrition there are two which stand out prominently, namely, scorbutus and rickets.

Scorbutus results from the absence in the food of a body of unknown nature, but probably allied to the digestive ferments which control the proper digestion, absorption and elimination of food; it is characterized by spongy, bleeding gums, tender swollen joints, extreme hyperasthesia of lower extremities, with marked anæmia.

Lesion: The disease shows itself in the bones, blood vessels and blood, by periosteal hemorrhage, chiefly of the bones of the lower extremity.

Symptoms: Marked pallor, weakness, tender bones and limbs, especially the legs, spongy bleeding gums and frequently blood in the urine.

Diagnosis: Diagnosis is simple and should not be confounded with rheumatism: the age of the child and localized pain in lower extremities only will help you to decide.

Treatment: Change of food, for it will invariably be on the wrong kind; wet nurse, if possible, and if on a milk diet, see that milk is not devitalized by prolonged heating; modified cow's milk to suit the child's digestion. Fruit juices are good, but in one of my cases was not tolerated on account of too frequent movements. In that case I gave beef juice and vegetable broths. In one other case, sent to the mountains from South Carolina, I gave egg albumin with orange juice with good results.

Rickets:

That condition which is due to perverted nutrition affecting nearly every tissue in the body, particularly the osseous system. A common result of faulty diet and antihygienic conditions, it is almost certainly a disease which comes from a deficiency of fat assimilation, whether due to insufficient fat in the food or to not being absorbed by the digestive system. Its common occurrence is due to too much starchy food and too little fat. This, together with antihygienic conditions, causes rickets.

Pathology: I will only briefly mention the inflammation of the epiphyseal cartilages and periosteum, marrow and the bone, changes in the cranial bones, retarded ossification, open sutures, large size fontanel, craniotabes, the thinning of cranial bones, changes in vetrebræ and ribs, producing the rachitic rosary.

Effects on dentition: As might be expected, dentition is delayed, the lower central incisors will not appear before the ninth or tenth month, and when the teeth do appear they are frail, deficient in enamel and crumble easily.

Changes in soft tissues: The ligaments become relaxed and flabby, the muscles undeveloped; the abdomen prominent from depression of thoracic walls and weak abdominal muscles, is one of the diagnostic symptoms.

Symptoms: Aside from those already mentioned, indigestion and catarrh of the bowels, sweating of head and neck, restless and awakening easily, fretful and peevish, easily excited, veins prominent, flesh appearing sore and slight fever. Constipation is also marked in some cases.

Diagnosis: Inquire into the history, inspect the gums for retarded dentition, the state of the fontanels and sutures, also the pot belly, and the diagnosis is quickly arrived at.

Treatment: Restore healthy nutrition by hygienic and therapeutic measures. Pure air and better diet, human milk if possible, modified cow's milk, meat soups, and in a child over two years a nutritious diet of farinaceous foods. Medicines used, lime and cod liver oil, with occasionally iron and bitter tonics.

Diarrheal diseases:

We have many cases of diarrheal diseases in artificially fed children. The per centum of deaths from nursing children is so small compared to the artificially fed child that we always feel safe (or reasonably so) in looking for the cause of the diarrhea along other lines in breastfed children. It has been my experience that in every case, except following acute infectious diseases, to find the diarrhea in bottlefed children to come from some disturbance of nutrition. It is not every time the artificial feeding itself is to blame, but ignorant feeding and improper food. Pure milk, better hygiene, and a better understanding by the mother or nurse of how to administer it will remedy this in a great measure.

Summer heat is a great factor in causing disturbances of nutrition with resulting diarrhea. Situated in the mountains with an altitude of fourteen hundred feet, we have cool nights during the summer months, especially in July and August. It has been my privilege to treat several babies from the central and eastern portions of the State with chronic diarrheal conditions, and it is wonderful to see how they take on new life, having the cool nights to recuperate. I attribute what little success I have had with them in a great measure to this.

As to general treatment:

First, good hygienic surroundings; fresh air is of the utmost importance. Keep children out of doors as much as possible in chronic cases; a change of residence to seashore or mountains. I have noticed improvement in a change of only a few miles. Absolute cleanliness and light clothing. In chronic cases, where patient is weak and emaciated, light flannel is preferable.

Dietic treatment:

In acute cases, withhold all food at once until the stomach becomes settled—especially milk, if the nausea is severe. Give stomach complete rest for several hours, beginning feeding again with barley water and egg albumin. When milk is begun, sterilize it and gradually increase with well diluted milk free from fat. In chronic cases there will be times when you will have to withhold milk and substitute broths, thin gruel, etc., but, I rely on modified cow's milk for regular diet. If a wet nurse is employed, especially in cases of malnutrition, following acute attack, remember the child is weak and not strong enough to get the flow of milk started, and no stated number of minutes for nursing should be recognized. One case, I call to mind, where a baby suffering from chronic ileocolitis was nursing every two hours for five minutes, and was so weak that it could not start the flow of milk, and was gradually starving to death.

Medicinal treatment:

Clear out the entire intestinal tract thoroughly, early irrigation of the colon with calomel, castor oil and the salines, while bismuth, catechu and opium are secondary measures. In cases where there is much prostration, French brandy, well diluted, is beneficial. In several cases of chronic bowel trouble, with ulcerated condition of the colon, have obtained good results by placing high up in colon olive oil with a few drops of carbolic acid and tincture opium, and giving internally iodine in an emulsion.

I will close by giving a brief history of a case of arthrepsia infantum. Conditions like this are often met with here in children coming from eastern portions of the State.

Baby twelve months old; tuberculosis and syphilis as causative factors eliminated, inquiry into cause found: prolonged attack of ileocolitis, with gradual wasting conditions following, and at my first visit stools liquid, greenish color, abdomen distended with gas, tongue coated, tissues flabby and soft, skin hanging in folds from the thighs and arms,

the stools very variable, sometimes brown and very offensive, at other times putty colored; temperature below normal, face pallid.

Treatment: This case came from a distant city and the changing of air and altitude was beneficial from the beginning. Milk was discontinued and began with barley water, later giving beef juice and beef blood, and as baby grew stronger added peptonized milk in increasing amounts until recovery. I want to also add, for the first ten days an olive oil bath was given each night and afterwards the child wrapped in absorbent cotton. For the first few days the baby was so weak and stomach so irritable that a solution of brandy was employed per rectum, with a pledget of cotton placed to keep from returning. No drugs were given for six weeks, then was put on tonic treatment.

WATER COMPARED WITH OTHER AGENCIES IN THE SPREAD OF TYPHOID FEVER.

C. A. Shore, M.D., Raleigh, N. C.

When we attempt to speak of the prevalence of typhoid fever we realize at once that it has all been said before, our minds have become accustomed to it, and no impression is made. But if we had had no typhoid fever in North Carolina for fifty years until the present year the cases which we now have, with no particular epidemic, would fill our minds with fear and horror. Many would flee to other climes as we remember they did from yellow fever in New Orleans, Memphis, and Jacksonville. But now we are unconcerned until we or our families are attacked. There is nothing remarkable about this; it is a law of the human mind to fear only the new and the unknown, but that should not be and is not the viewpoint of the physician, and even the slightest advance in the knowledge of such a disease is of importance to us.

During the last few years facts of great importance concerning the epidemiology of this disease have become established, chiefly by the work of a chain of laboratories established by Robert Koch in the Rhine provinces of Germany, and since confirmed by many workers, particularly by our own Public Health and Marine Hospital Service. The chief centers of typhoid fever in Germany were in conquered Alsace-Lorraine, and possibly the newly established laboratories were given additional support and power because, for political reasons, it was necessary to control the typhoid fever in these fortress towns. I doubt if the disease was more prevalent in Alsace-Lorraine than it is in North Carolina. Accurate statistics are of course wanting with us, but we know it is

prevalent and we have a very bad reputation over the rest of the United States. Whether this is altogether deserved or not I do not know.

The two great discoveries of these German workers have changed our entire conception of the transmission of typhoid fever. These discoveries were, first, that the number of mild and often unrecognized cases greatly outnumbered the severe cases with classical symptoms. In one village where seven cases were reported, it was found by bacteriological study of the blood and excreta that there were in reality sixty-four cases, most of which were in children.

The second great discovery was that many persons who have recovered from attacks of typhoid fever—sometimes so light as to be unrecognized—continue to harbor typhoid bacilli and to excrete them in their urine and feces for an indefinite time. The problem of controlling outbreaks of the disease at once became more complicated and more difficult. The laboratories in Germany were given powers of control which would scarcely be granted in this country. A widespread examination was made and every case of the disease was taken to a hospital unless certain regulations were adopted in the home, which, on account of the expense, made admission to the hospital practically compulsory. After convalescence the patient was not discharged until his excreta were free from typhoid bacteria. If, however, they were still present ten weeks after recovery the law would not permit a longer detention, but the patient was discharged with careful instruction about the sterilization of his excreta. The result has been a gradual but constant reduction of cases in this region.

I have given this brief description because with us the laity and the greater part of the medical profession still regard typhoid fever as chiefly water borne. Almost daily I hear a history on this order: "There was one case of typhoid fever in a certain family and ten days later a second, and now there are others, and therefore we suspect the well of being contaminated." By this time the well is probably contaminated, if it is an open top bucket well, and if the members of the family have come from the sick room directly to the well and have handled the bucket and chain. But if the well is contaminated so probably are the dishes on the table and the food in the kitchen, so that only the immune members of the family escape an attack. Meanwhile no instruction has been given about the danger of direct contagion or the disposal of the excreta, which may be thrown on the ground or into an open closet where the flies can get a load of bacteria to carry into the open windows of the neighbor's kitchen. When the neighbor is stricken down he remembers that "last spring" he drank out of the well where the first case occurred.

The well is then closed up and a second one dug, which in a few weeks is as dirty as the first.

Now, I do not mean to intimate that typhoid fever may not be water borne. On the contrary most sudden and widespread epidemics in towns are so caused, but these on the whole furnish a small part of the cases we see in our daily practice. We should not, therefore, relax our care for the purity of the water supply. Every water company should be compelled by daily care to have its water in such a condition that the carriage of bacteria of human origin is impossible, but more important than this should be the duty of every health officer and every physician to teach the contagiousness of typhoid fever and in particular to attend to the sterilization of all excreta from the patient, the urine as well as the feces. Also the sale of milk from any home in which there is a case of typhoid fever should be strictly forbidden.

We are not going to get rid of our typhoid fever at once or by any one simple method. An installation of sanitary water supplies, public and domestic, will help, but it is by no means the most important measure; a general knowledge of the danger of direct contagion and particularly the danger in excreta is far more important. I believe in this connection that the teaching of sanitation in rural districts by the Hookworm Commission is going to bear good fruit, and I also believe that widespread inoculation with typhoid vaccine will have a great influence in checking the disease, but let us not be content in using one of the means of control, but all that are possible.

FALLACIES CONCERNING INSANITY.

Paul V. Anderson, M.D., Richmond, Va.

The relation between mind and body has always been an intensely interesting and baffling problem to all thinking men, but the mystery of this relationship is all the more baffling where the diseased mind is concerned. Ever since the time when Nebuchadnezzar's reason was dethroned, "and he was driven from men, and did eat grass as oxen, and his body was wet with the dew of heaven, till his hairs were grown like eagles' feathers and his nails like birds' claws," the subject of mental trouble has been surrounded by mysticism and these unfortunates have been considered by many as the victims of some awful visitation and not as human beings who are ill and who should be treated as other ill persons with the possibility of an amelioration of the symptoms or even, at times, of a cure of the disease.

The greatest progress in medicine has been in preventive hygiene for those diseases which kill, but we are just entering into the development of a mental hygiene which holds some hope for the prevention of mental diseases which do not often kill in themselves, but which maim and mar and, at times, make life burdensome, if not unendurable, for those afflicted by them. It is true that there is no more horrible disease than a mental trouble, or more far reaching in its consequences, but to the lay mind and to those who have not studied this subject and practically lived with the mentally affected, mental troubles, their nature and extent, have been invested with many terrors that do not really exist and there are many fallacies concerning them which are now beginning to be corrected.

In the first place, there is a widespread belief that insanity is alarmingly on the increase, and if we take into consideration the enormous accumulation of insane persons in hospitals this belief would seem to be justifiable. According to the census report the total number of insane in the United States was, in 1903, 151,151; the number of hospitals, 328; while in 1890, the number of insane was 74,028, in 162 hospitals. Thus, you see, there was an increase of 100 per cent in the hospitals for the insane. Considering this, one would naturally think that this particular disease showed a great increase which far outstripped the growth of the general population. That this view is untenable is shown when we consider that, first, patients do not die of insanity itself except by suicide, and a comparatively small number which succumb to exhaustions of delirious conditions. Thus there is a steady increase of chronic cases, a far greater number being admitted than are discharged. In one hospital it is stated that there are five per cent more admissions than discharges. Second, a great number of patients who were formerly kept at home and in almshouses are now taken to hospitals. These were never enumerated before. Third, there are many more conditions which are now classed as insanity than formerly. This is especially true of senility, which was formerly counted as the consequences of old age, or, as Osler so well expresses it, "The slow gradations of decay." In Massachusetts, 19.71 per cent of the recent admissions were of this class. Fourth, thanks to preventive medicine, more people are now alive to become insane. Dana has showed that more people become insane between the ages of thirty and forty than at any other period, and he calls attention to the fact that more people are now living at that age than ever before, the expectancy of life in the United States having increased from twenty-eight years in 1840 to 34.5 years in 1900. Fifth, better methods of taking statistics have also given

a more complete record of the mentally afflicted with each census. The English statistics do not show, according to Humphrey, an absolute proof of increase in insanity in England and Wales. From the best authorities on this subject there has been no markedly appreciable increase in insanity which cannot be explained by the increase in population, and, according to these authorities, there is no need for alarm over the apparently terrible increase in this disease.

Many of the so called causes of insanity are really but symptoms of the disease, and it is rare that one factor is the cause of the trouble. A number of causes are usually responsible for the mental collapse. Dr. Carlos McDonald has well said that "Substantially, every individual at some time or other in his life is exposed—in many cases repeatedly—to many of the so called exciting causes of insanity, both mental and physical, and yet despite this fact we find that sanity is the rule—insanity, the exception." In other words, according to White, "The normal mind, under the influence of stress, does not become deranged unless from the operation of traumatism, toxemia, or an extreme degree of exhaustion, and not even then with anything like the facility of the mind predisposed to disease by bad heredity."

Although alcohol and syphilis are responsible for at least 20 per cent of the cases of insanity in males, even here there is a chance for error, for in many cases of early paresis, manic depressive insanity and dementia præcox, alcohol is simply an early manifestation of the disease and not the cause of the trouble. (And, too, only a small part of syphilitics develop paresis. White has said that paresis is common in certain countries where syphilis is uncommon. In Egypt, and a few years ago, at least, this was common in Japan. This would indicate, however, that other factors were required to reduce cerebral resistance and thus make it the *locus minoris resistantice* on which the mind produced its effect.)

The menopause has for a long time been considered a cause of insanity, occurring in women between forty and fifty-five or thereabouts. It is true that insanity is quite prevalent at this period, but it is no more common in women than in men. In fact, more men become insane at this period than women. It is interesting to note just here that according to the United States census there seems to be a greater increase in the percentage of insane men than women, and the percentage of insanity is greater among the unmarried than the married. The census of 1904 showed that in all the hospitals in the United States 50.1 per cent were single, leaving 49.9 per cent to be divided among the married, widowed, divorced and unknown. There has been a marked

change in the opinion of those who have studied this subject, and now the menopause is no longer considered as a time of life of necessity fraught with peril and difficulty. It is best in any case of insanity to look deeper before ascribing to any local, physiological condition the entire responsibility of the upset.

There is a mistaken belief, too, that amenorrhea in itself causes insanity. It is rather a symptom of the disease. In fact, the menses cease in a great many mental cases, but are reëstablished as soon as mental quietude develops and the patient's physical condition improves. If, however, the reëstablishment of all the bodily functions is not accompanied by mental improvement the gravity of the prognosis is increased and there is more than likely a chronic condition to deal with.

Solitary sexual practices are thought to produce a large part of insanity in the young, but this is not true. The practice is more frequently a symptom. In rare instances, in unstable individuals, it may be the cause of the outbreak.

The term puerperal insanity is frequently misleading, for many forms of insanity, especially dementia præcox and maniac depressive insanity, may be brought forth during the puerperium. Many of these cases belong to the infectious and exhaustive psychoses, which are brought about by other cause than pregnancy, parturition and lactation. The prognosis in these cases—that is, the infectious or exhaustive cases—is usually good, if the patient's strength can be maintained.

Of course, it would be misleading to say that there are not certain single factors which produce insanity, that is, head injuries, syphilis, alcohol, toxemia, etc., but the cases of insanity due to these are comparatively small in number.

Insanity is not necessarily due to heredity, for, in many cases, no hereditary taint can be found. Heredity is commonly found, however, in cases of maniac depressive insanity and dementia præcox. Because a man's ancestors have been insane it does not necessarily follow that he will become mentally unbalanced. It is of great advantage to know one's weak point so that that point may be guarded against undue stress. The knowledge of these hereditary tendencies is the keynote of preventive mental hygiene, and is a guide by which the life of the individual should be regulated. Rosanoff has given the following rules of theoretical expectation:

(*a*) Both parents being neuropathic all children will be neuropathic.

(*b*) One parent being normal, but with the neuropathic taint from one grandparent, and the other parent being neuropathic, half the

children will be neuropathic and half will be normal, but capable of transmitting the neuropathic makeup to their progeny.

(*c*) One parent being normal and of pure normal ancestry and the other parent being neuropathic, all the children will be normal, but capable of transmitting the neuropathic makeup to their progeny.

(*d*) Both parents being normal, but each with a neuropathic taint from one grandparent, one-fourth of the children will be normal, and not capable of transmitting the neuropathic makeup to their progeny; one-half will be normal, but capable of transmitting the neuropathic makeup, and the remaining one-fourth will be neuropathic.

(*e*) Both parents being normal, one of pure normal ancestry and the other with the neuropathic taint from one grandparent, all the children will be normal, half of them being capable and half not capable of transmitting the neuropathic makeup to their progeny.

(*f*) Both parents being normal and of pure normal ancestry, all the children will be normal and not capable of transmitting the neuropathic makeup to their progeny.

Even though there is a bad heredity, with the proper care and environment these people may escape the disease which has afflicted their ancestors.

It is generally conceded now that it is erroneous to believe that the marriage of first cousins will necessarily result in defective progeny. If the heredity is good in both parents, the offspring will be normal; if the heredity is bad in both, the evil hereditary influence becomes cumulative in the offspring.

The question of what constitutes insanity often arises. A man's sanity is not judged by what he thinks, but by what he does. Mercier has well expressed this when he says, speaking of delusions and hallucinations, "Their coexistence implies and necessitates disorder of those higher nerve processes which actuate the one and accompany the other. It is conduct—the way in which an individual adapts himself in ways large and small to the circumstances which surround him—that is the essential factor in insanity and gives it its whole significance. In short, if we find a mental disorder and it has no influence on conduct, we can not regard it as an evidence of insanity." For instance, a man may hear voices the greater part of his life, and yet, if his conduct is not influenced by them, he is not insane. Such people frequently recognize that these voices are hallucinations, but they cannot put them away absolutely. Martin Luther always contended that the devil visited him and that he saw him with his bodily eyes. Dr. Johnson said his mother frequently called him, although she was quite a number of miles away.

Napoleon contended that he saw a bright and brilliant woman before him on all great occasions, and Cromwell said that in his school days an enormous woman appeared to him and told him of his future greatness.

Delusions do not necessarily mean insanity. Frequently we think that it is Saturday, when in reality it is Friday or Thursday, and, at times, it is difficult to convince us that we are wrong. This is a delusion, but it does not constitute a mental unbalance. Stedman goes so far as to say that a man may be in normal health yet think all his life that his legs are made of glass, and so long as this does not keep him from carrying out his daily duties he is not insane. If, however, he goes to bed and remains there for fear that the legs will break if he stands on them he is insane. This seems to be a broad assertion, but many individuals go through life and are useful citizens, yet they possess almost as grave hypochrondriacal delusions.

All of you have seen people influenced by pnobias. Some fear open spaces; some fear closed spaces; some fear dirt; some fear germs; some fear elevators; some fear that they will become insane. These tormenting fears may exist throughout life, yet they are not disclosed and do not interfere with the performance of the duties of life, and these persons cannot be called insane. It is true, however, that these terrors, at times, become so great that they cause neglect of business, and the man or woman requires treatment for a while, but usually they recover promptly. At times, even, the borderland of sanity is passed by such people, but the trouble is usually temporary, and with proper care and treatment they recover so that they are able to take up their life's work again. To reiterate, then, medically, a man is mentally abnormal, but legally he becomes insane, when by his conduct he is dangerous to himself or to his community and becomes a nuisance in business.

It has been often said, "Once insane, always insane." This is by no means true. Thurman, after following histories of patients treated in The Friends' Retreat in England for forty years, formulated the following: "In round numbers, of ten persons attacked by insanity, five recover, and five sooner or later die during the attack. Of the five who recover not more than two remain well the rest of their lives. The other three sustain subsequent attacks, during which at least two of them die. Thus there is about from twenty to twenty-five per cent of permanent recoveries. This at first sight looks bad, but the view is modified when we consider that many of these people have long intervals in which they are sane and productive and live as useful citizens in

the enjoyment of life. Frequently the interval is from ten to twenty years between attacks. These statistics are also based on hospital reports where naturally the worst and most incurable cases finally go. A large number of mild cases recover who are never reported. Thanks to the advances being made in preventive mental hygiene and with better methods of treatment for the psychoneuroses, and with better and more sane methods of treatment for those afflicted with the psychoses themselves, the future looms big with hope and it is not Utopian to believe that much will be done for the prevention, and even, at times, for the cure of those afflicted with this seriously grave malady—insanity. If it could be realized that a mental case requires early treatment just as much as a case of tuberculosis, a great step forward would be made. You do not wait until a cavity has been formed before treating a tuberculosis of the lungs. Neither should you wait to treat a mental trouble until a violent outbreak occurs and treatment is made compulsory on account of the fact that the patient has become dangerous to himself and to the community.

DISCUSSION.

Dr. Isaac M. Taylor: Dr. Anderson has so fully covered the ground that it seems there is not very much more to be said by any of us, except to indorse the opinion he has expressed, and one of the most important for North Carolina—the question of the increase of insanity. It is my opinion that insanity has not increased. We recognize the symptoms earlier, and are much more ready to accept the aid of the State institutions for the mildly insane. Our people now have less time to care for their invalids than they had years ago.

The importance of heredity is not so great as the community usually suppose, but the influence of heredity in the transmission of faulty brain conditions from faulty bodily conditions I think is of great importance. We rarely see an insane person who does not show in his forbears some marked health degenerations.

Dr. Cyrus Thompson, Jacksonville: I am always interested in papers of this sort, and I am always interested in whatever my friend Dr. Anderson has to say. I consider him a rather handsome and exceedingly fine specimen of North Carolinian; and despite his stature, I am content that he is an example of us in the great city of Richmond.

There is nothing in the world that interests me so much as folks and the mental peculiarities of folks. They differ from one another vastly, though there is another fact quite as true, that we differ from ourselves quite as much as we differ from one another. We take up the study of

eugenics and we plan a perfect race on the basis of heredity. If I believed everything which the eugenists say, I should shrink down in absolute desperation and believe in nothing but the most absolute fatalism. I believe there is a vast deal in heredity. I believe, however, that heredity is nothing in the world but crystallized environment. I believe that man and animals and plants, and even perhaps the dead matters which make up the earth, are but equations of their environment. Therefore I recognize the wisdom of the wisest and greatest race of men that ever lived, I recognize the wisdom of the wisest man that ever lived, the wisdom of Solomon, who has told us to "Train up the child in the way he should go, and when he is old he will not depart from it." In other medical bodies and at other times I have hammered at this one thing: it matters not what your heredity may be, it matters not what your insane bias may be, if you take the child and give him an intelligent training by intelligent people you may make a tolerably sane man of him. You can take people of sane ancestry and spoil them in the rearing, and make neurotics and what we term insane men and women. It is the degeneration of the vitality in men, of the social instinct, of the sense of allegiance to the community and God, that lets children grow up reckless and come to waste. Eugenics will find its most successful work along the line of regaining stronghand family authority. Just governments derive their power not only from the consent of the governed, but from the duty the strong owe to the weak, the greater to the less. We have the right, and it is our duty to provide an environment that will develop into the right heredity; and then through the generations to come, it is the duty of men and their right to preserve the best they have attained to.

Dr. I. W. Faison, Charlotte: I want to get up to indorse every word that Dr. Cy. Thompson has said. I believe to the fullest extent every phrase, every sentiment he has uttered. In dealing with children as I do, there is one important thing the doctor left out, one particular thing. Environment and control, both at home and at the schools, are absolutely essential, but one thing to add to bring about the environment to make this child what Dr. Thompson and I would pray for every day of our lives is the matter of something to eat. You may rear children as you please, but if they are not fed right they can not and will not be men and women that are going to keep out of the insane asylum. As I said on this very floor on Monday, the important period of life is the first five years of life. If during these first five years the children were put under the proper training, in the proper surroundings, in three generations we would have the finest race of people in North Carolina that were ever

seen. You can not grow a child to make a man without feeding him. The greatest power in this country to make men and women strong is hog and hominy. These are the proper things to eat, in proper proportion. The child under five years of age demands for the maintaining of that child and the growth and development of that body and that mind more caloric value per day than any banker in the State of North Carolina, because he has to maintain his waste and meet his development. If these children were fed and trained right we would not have so many insane asylums, we would not spend so much money training men and women to take care of our insane people.

Dr. Lewis W. Elias, Biltmore: Dr. Anderson always comes before us with very suggestive papers, as the discussion witnesses. Although we are wandering from the paper, I think it shows that it stimulates us to discussion. One question I should like to ask is in regard to the great number of those insane people who go back to their work and become quite productive. We have a very high percentage of homicides in the United States, and many think these homicides are committed by people more or less insane. That would tend to neutalize the productiveness of the exinsane members of society. I would like Dr. Anderson to say something about this. I think there are fifteen homicides in Italy where there are one hundred in the United States.

Going back to what Dr. Thompson said, I think we are inclined to be a little bit faddish about eugenics. Eugenics has undoubtedly a great deal in it, but I do not think we should swallow it whole until it has been more fully worked out. What we need is more attention to the reorganization of the home. We used to have homes that were little kingdoms whose rulers dominated the subjects. Now the subjects dominate the rulers. We will have to go back and reform the homes so as to train the children properly.

Dr. L. G. Beall, Greensboro: There is just one point in Dr. Anderson's paper that I want to emphasize. The family physician has it in his power to prevent a great deal of insanity. When a business man, for instance, finds that he cannot add up a column of figures correctly, when a woman is becoming hysterical, the family physician has been prescribing a sea voyage or a sojourn at some resort. The people go to these places, enter into every form of activity, and frequently the beginning disease is so fixed that it takes a number of months to overcome it, when at first it could have been eradicated in a short time with proper treatment.

Dr. Paul V. Anderson, Richmond, Va.: I appreciate the discussion given my paper, and I especially appreciate the kind words of my friend, Dr. Thompson. Concerning what Dr. Elias said about homicides, there are no statistics which show what proportion of homicides are committed by people who have been in insane hospitals and who have been discharged as recovered.

In my judgment much can be done for the prevention of insanity if the symptoms can be recognized early enough and treatment instituted at once. I would like to close this discussion with the quotation from Dr. Adolph Myer, Professor of Psychiatry in Johns Hopkins. He says, in speaking of dementia præcox, "Among the 25,000 persons who are today (1903) in the public and private institutions of New York alone, there are many brilliant hopes buried, largely owing to a lack of knowledge of what some people need in the way of social and personal hygiene. Remember that some of the most illustrious members of the race have been dangerously near the border line of insanity and seem to have been great, although they showed obvious traces of the same misled instincts that have completely wrecked others. Should not the home, the press, and the school mind some of these dangers and shape their methods accordingly?"

THE DIAGNOSIS OF PELLAGRA.

K. G. Averitt, M.D., Cedar Creek, N. C.

In making a diagnosis of pellagra it is very important to remember that it is a definite disease and differentiated from other diseases by symptoms peculiar to itself. The diagnosis depends upon the symptoms present and not upon any theory as to etiology.

There is no diease in the whole domain of medicine where inspection or observation with the naked eye is of more use to the physician. The external symptoms and the condition of the patient must be carefully inspected and the history of the patient minutely noted. Laboratory and microscopic findings at present give very little information. In obscure cases lymphocytosis may give some information, but it does not justify a diagnosis of pellagra. The same is true of examination of the urine. A decrease in quantity, acidity and specific gravity and the presence of indican may be suggestive, but these changes are not always present and, therefore, not to be depended upon in making a diagnosis. In tuberculosis and diphtheria the finding of the bacilli of these diseases clinches the diagnosis, but so far no bacterium has been found that aids in the

diagnosis of pellagra, yet we believe there is one and that it will be found.

The Wassermann test, while not indicative of pellagra, is very useful in the differentiation of pellagra from syphilis.

Bass of New Orleans, Wood of Wilmington, and perhaps others have attempted complement fixation and, while the reaction has been interesting, enough work has not been done along this line to express any opinion of its value.

The British Pellagra Commission, according to Wood, reported the finding of peculiar bodies in the cerebrospinal fluid, but as this author states, it will require further study to determine the importance of this discovery. I am, however, very much impressed with the discovery, because the nervous symptoms occurring in the course of the disease would lead to the conclusion that something might be found in the nerve centers that would settle the diagnosis in questionable cases.

As none of the laboratory or microscopic tests have proven trustworthy, the diagnosis as stated in the beginning of this article depends upon the symptoms, and in arriving at a diagnosis from these symptoms we must note carefully the history of the case as to when the symptoms first occurred, disappeared and reappeared, the condition of the patient between the appearance and disappearance of the symptoms, and the different ways pellagra appears to the physician for diagnosis.

In determining the clinical value of the symptoms it is best to consider the ways in which the disease appears to the physician, and the best classification of the ways is that given by Roberts, viz.:

1. "Pellagra suspected by symptoms presented during onset.
2. "Diagnosis by symptoms presented during an attack.
3. "Diagnosis by symptoms presented in the intermission between attacks.
4. "Diagnosis by symptoms presented in the type pellagra sine exanthemata, or pellagra without the eruption."

First. Pellagra suspected during onset and before the dermatitis.

It is very important to make an early diagnosis of pellagra, because the sooner the physician is sure of his diagnosis the sooner will he begin treatment and the more chances will the patient have of recovery. The disease may be so mild during the first or second attack that the patient is unable to give any prodromal symptoms. He is a little weak and easily tired, but perhaps nothing more. The first symptom in these mild cases to arouse suspicion and to clinch the diagnosis is the dermatitis and this may be very slight and hard to discover. Before the

appearance of the erythema in these mild cases it is impossible to make a positive diagnosis. In the large majority of cases, however, there are symptoms that should put us on our guard. These symptoms consist of diarrhea without apparent cause, a tongue with a red tip and borders, uneasy sensation in the abdomen, and often a pain just below the ensiform cartilage, rumblings in the intestines, insomnia without cause, increased reflexes, loss of energy, loss of flesh, lowered specific gravity in the urine, a decreased acidity or total absence of free hydrochloric acid in the gastric contents, and the fact that the season is the springtime.

Cases presenting these symptoms should be closely watched for the appearance of the bilaterally symmetrical erythema, and especially if several cases of pellagra have occurred in the neighborhood.

I am inclined to pay particular attention to the symptoms of lowered specific gravity of the urine and the diminution or absence of hydrochloric acid in the gastric contents in these cases, because I have had several cases where the two symptoms were present and a diagnosis of chronic interstitial nephritis had been made by the attending physician, turn out to be cases of pellagra.

Second. Diagnosis by symptoms presented during an attack.

The diagnosis is easily made when the dermatitis is present. The symmetrical areas of erythema appearing on back of hands, elbows, neck, forehead, forearms and sometimes on the knees, legs and feet, make the diagnosis sure, except in cases of sunburn, alcoholic dermatosis, eczema, erythema multiforme, weathering conditions and a few other rare diseases, and these can usually be differentiated by the known symptoms of these diseases and the history of each case.

Alcoholic dermatosis has been the hardest of these for me to differentiate, because patients addicted to the excessive use of alcoholic drinks are not always willing to admit the truth, but in most cases it is possible to get the information by watching the patient, and inquiring carefully into his habits. Recently a young man applied to me for treatment who has gone the rounds of about all the doctors in my county and New Hanover. On examination I found him suffering with indigestion, palpitation of the heart, vertigo, exaggerated reflexes, and bowels alternately loose and constipated, and an erythema on the back of both hands. He said this condition began soon after taking a drink of corn whiskey, but that this was the only drink he had ever taken. Knowing the patient all his life I had and still have reasons to think this drink has been supplemented by many other drinks, and I am still in doubt whether he has pellagra or alcoholic dermatosis, but am inclined to think his condition

is caused by alcohol. Ths and other similar cases convince me that we should be careful in our diagnosis in patients of this class.

Third. The diagnosis of pellagra in the intermission between attacks.

This is often a difficult task. What cutaneous, digestive and nervous symptoms are present should be put together and closely studied to see if there has been an exacerbation of the trouble each spring. The examination will usually reveal more wrinkles than normal over the first phalangeal joints of the fingers, slight roughness of the skin over the elbows and a pigmented condition on back of hands resembling the color of cedar wood. The patient will give a history of occasional attacks of diarrhea, stomatitis and more or less nervous depression, and some patients will readily admit that they had the previous spring a slight sunburn on the back of the hands. These symptoms and signs occurring in a patient from the rural districts or in a person living on a stream of water are very strong evidence of pellagra. Just what relation a stream has to the disease is not known, but it is strong evidence in favor of the fly or gnat theory of the cause of the disease. During the last few weeks highly sensational reports have occurred in the newspapers that the disease has been discovered by two Italian physicians to be due to a colloidal substance found in the drinking water. This is very plausible, but like other reports occurring in the secular papers, lacks confirmation. If it should prove to be true the finding of the substance in the water used by patients presenting themselves would help to clear up the diagnosis, and would probably account for more cases occurring on streams, as water in these regions is not apt to be of a good quality.

Fourth. Diagnosis of pellagra without the dermatitis or sine pellagra.

It is very doubtful if one can have pellagra for a series of years without skin manifestations. The erythema may have been so slight as to escape detection, but I am constrained to believe that the skin lesion occurs in every case of true pellagra at some time during the course of the disease, though it may be very slight and may have escaped the attention of the patient and also the physician. Without this symptom, with our present knowledge of the disease, I would certainly hesitate to make a diagnosis, because as another states, sprue has been found to occur in our Southland and the diseases have so many similar symptoms that it is impossible to separate them without the bilateral or symmetrical erythema to guide us.

In conclusion I want to emphasize the fact that many cases of pellagra are never diagnosed and a great many recover without treatment and without the patient ever knowing of its existence. This being the case,

it is plain to see that the diagnosis is not always the easiest thing in the world, but by paying particular attention to the symptoms the annual exacerbation of these symptoms, diarrhea and stomatitis occurring without apparent cause, we should be able to make a diagnosis before it is too late and before insanity has developed and the patient beyond help.

A SHORT STUDY OF ALCOHOL AND ITS EFFECTS ON THE HUMAN SYSTEM.

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Alcohol, in some of its various forms, has been so long used by man, and the literature on this subject is becoming so immense, that it will be impossible for me to go very deeply into any phase of this subject; therefore, I shall ask your indulgence if I seem to touch but lightly on points that are very important, as any extended study of any phase, however important, would make this paper entirely too long.

All the various forms of alcohol—whiskey, brandy, wine, beer, gin and rum—have been known and used as beverages by the human race for thousands of years. Wine and beer were used to excess by the Egyptians five thousand years before Christ. Two thousand years before Christ we learn that distilling was done in India and China. The Egyptian's tombstone records tell us of many efforts to control by law, even in that early day, the evil effects of its use. The Pharaohs, who did not themselves drink, made laws restricting the size of the vineyards; requiring the sellers of wine to be located on side streets and to take care of those who got drunk on the wine they sold. One tombstone tells us of a priest-physician, who, more than seven thousand years ago, built a house for the healing of the drink madness. On other tombstones we are told of men who became habitual drunkards from blows on the head or from sunstroke.

To learn that men got drunk in those days, even as they do now, we need only refer to two incidents in Genesis; one, of the curse that Noah put on Ham and his descendants because the latter looked on the nakedness of his father when he was drunk, and the other, the unmaidenly trick that Lot's daughters played on him after they had made him drink too much wine.

The cuneiform inscriptions on the Babylonian bricks, now being dug up, tell the same story of drunkenness and the efforts to correct it. It is the same under the civilization of the Greeks and of the Romans. We

find in the writings of some of their wisest lawgivers a recognition of the fact that drunkenness is a disease, frequently uncontrollable, and that crimes committed in that state should receive a lighter punishment than ordinarily given. Their physicians recommended many remedies for its cure.

It was a drunken horde that overran the Roman civilization and plunged Europe into the darkness of the Middle Ages. And of all those barbarians it was our ancestors, the Anglo-Saxons, who had the worst reputation as gluttons and drunkards, and after they came to England they kept up that reputation for more than a thousand years; and during all those years, literature was full of drinking songs, like the attractive verses of Omar Khayyam, in the eighth century:

> "Ah, my beloved, fill the cup that clears
> Today of past regrets and future fears;
> Tomorrow? Why, tomorrow, I may be
> Myself with yesterday's seven thousand years."

Or Byron, about 1815:

> "Fill the goblet again, for I never before
> Felt the glow that now gladdens my heart to its core.
> Let us drink! Who would not? For in life's varied round,
> In the goblet alone no deception is found."

It is not so many generations back when it was not considered disgraceful for a gentleman to "fall under the table" at parties, public dinners, etc., and there were no warning notes given out either from the public or from the medical fraternity until comparatively recent times.

In 1745 Condillac, a French philosopher, wrote expressing clear views of the disease of inebriety, and that the State should provide means for its treatment. In 1790 our own Dr. Benjamin Rush, certainly one of the most brilliant physicians that America every produced, expressed the same views with great clearness. From this time on, every ten or twelve years, some prominent physician in this country or in Europe would write about the evils of alcohol; but for how many years it was "as the voice of one crying in the wilderness"; there were none to hear or take heed. It was not until about 1880 that this doctrine became of such general belief that it paid charlatans to take it up, and the newspapers were full of gold cures, etc., many of them being so powerful that the wife could administer it in her husband's coffee without his knowledge and effect a cure. Even others were done in three days' time.

In the last fifteen years we have reached the stage of scientific study

when it is to be hoped that much good will be accomplished by the number who are now devoting their lives to this work.

Alcohol can be distilled from any grain containing starch, and is made from potatoes, barley, rye, wheat, oats, corn, and rice. The alcohol that is used medicinally and as a beverage is the second in the list of alcohols and is known as ethylic or grain alcohol (C_2H_5OH). The first alcohol is methylic or wood alcohol and is very poisonous. The third, fourth and fifth alcohols will get mixed with the grain alcohol and are then known as fusel oils. These are more acutely poisonous than the grain alcohol itself, and could be easily separated in the distilling, if the distiller so desired, on account of the difference in the distilling point; for the boiling point of grain alcohol is 172° F., while that of the three fusel oils is 207° F., 225° F., and 270° F., respectively.

Alcohol seems to be very essential in the manufacture of drugs, chiefly as a solvent, but, in my opinion, I do not think there is any place for it in the practice of medicine. If it has done good in the past, as a stimulant or temporary sustainer of life, we have many drugs to take its place that will do just as well as alcohol, if not better, so on account of the evil it has done I do not prescribe it at all.

Let us now inquire into the effects of alcohol on the human being, both acute and chronic. Applied locally, alcohol hardens the skin by abstracting water from it, coagulating some of its albuminoid constituents, and dissolving its fat. It has the same effect on mucous membranes, thus acting as an astringent. It is a mild antiseptic, and has some slight anæsthetic action locally, perhaps, by its cooling or its contracting effect on the arterioles. A single dose of alcohol introduced into the stomach has a reflex effect—making the heart beat faster and stronger and all the blood vessels dilate, especially the peripheral vessels. It produces a glow of warmth that diffuses over the whole body, and a superficial congestion of the lining of the stomach. This increased blood supply causes the stomach to throw out more gastric juice. There is a slight rise of temperature and for a short time all the bodily functions are more energetically performed.

I believe it has been agreed that alcohol in a small quantity acts as a food; that the body can dispose of an ounce or ounce and a half of pure alcohol in twenty-four hours, thus preventing the consumption of body tissue. If a considerable dose is taken the phenomena are those of exhilaration, of excitement, of slight intoxication. A still larger quantity (the amount differs very much in different people, and from day to day in the same person) and the person is drunk. There is loss of muscular power, incoördination of voluntary muscles, frequently slobbering

and a rambling incoherence, and then coma. With the coma there is complete muscular relaxation, with stertorous breathing, and as the lethal dose is approached the coma is increased. The coma from ordinary drunkenness is not profound, as we can rouse the patient temporarily by loud calling, cold water to the head, etc.

It is not as easy to make a certain diagnosis of drunkenness as an inexperienced person would imagine, and many a death has occurred on account of this error being made. We will suppose a patient found comatose on the street or on the public road. There is no one who knows him or can give any history of the case whatever. We have to diagnose drunkenness from apoplexy, uræmic coma, coma from opium or any other poison, sunstroke, epileptic coma or from congestion of the brain. Alcohol and cold combined will probably give a lower temperature than you can get from any other cause. Dr. Osler reports a temperature of 24° C. (75° F.) which had not risen over 33° C. (91° F.) in ten hours. The respiration is slow, Dr. Osler reporting a case of six per minute. In sunstroke or heat exhaustion, you invariably have fever. After epilepsy the party will have froth on the lips, generally bloody. Perhaps the greatest difficulty will be in separating drunkenness, apoplexy, uræmic coma, opium or other poisoning. Because the breath smells of alcohol do not jump at conclusions. It may smell of alcohol in any of these states; for a perfectly sober person may have taken a drink because he was feeling badly just before the attack came on. The breath will smell of whiskey in the drunkard, perhaps of paregoric or laudanum in the opium case, or of urine in the coma due to uræmia. The pupils will have a pinpoint contraction in the opium case, dilated in the case of alcohol (Osler) and variable in apoplexy and uræmia; the two pupils may differ in both of these last. They are apt to dilate widely in all of these cases just before death. In apoplexy or head injury we can look for deviation of the eyes, paralysis of the mouth, or a peculiar flaccidity of the musles of the arm or leg that would indicate paralysis. In opium poisoning and uræmia, the coma is generally more profound than in acute alcoholism. You must draw the urine and test for albumen. In uræmia, advanced so far as to cause coma, you would generally also find valvular disease of the heart with arteriosclerosis.

Having carefully and cautiously gone over your case and deciding that it is acute alcoholism alone (for you must remember that it is not impossible to have apoplexy, uræmia, and acute alcoholism in the same case), you give a hypodermic of strychnine and atropine, use a stomach

tube and after washing out the stomach you give ammonia until the patient sobers up, using artificial respiration if it is necessary.

Where a very large quantity of alcohol is taken at once, you may have death almost instantaneously from reflex action on the heart. This is rare. Generally after an excessive dose (this differing in different individuals and in the same individual at different times) there is no stage of excitement—coma comes at once and you may have fatal convulsions.

We have brought our alcoholic patient now to the point where he can not begin his morning work until he has been properly stimulated, or rather this applies to the steady drinker, for now we must divide them into two classes—the steady drinker, who must have about the same amount of alcohol every day, with occasional excesses, and the *spreer* who will go for days without touching a drop and then plunge into terrific excesses. In the steady drinker we begin to have the characteristic facies, the venules of the cheek and nose are dilated; those of the latter are enlarged and red and may produce the condition known as acne rosacea. The eyes are watery and the conjunctiva congested and bile-tinged. His stomach is now giving him trouble, for alcohol—at first an aid to digestion—has by overstimulation brought about a catarrhal state of the mucous membrane. The abnormal mucus, which is elaborated in great quantities, acts the part of a ferment, and the starchy, saccharine, and fatty elements of the food undergo the acetic, lactic, and butyric fermentations, and we have acidity, heartburn, pyrosis and a regurgitation of food.

It will not be long before our steady drinker will be suffering from a peculiar retching in the morning, known as the "morning vomiting of drunkards." But both our habitual drinker and our spreer have now begun to have "attacks." These attacks are known as mania-a-potu or delirium tremens. A spree in a temperate person, no matter how prolonged, is never followed by these attacks. Few authorities make any distinction between mania-a-potu and delirium tremens, but the former should be applied to the acute, violent forms, while the latter should be applied to the chronic. Mania-a-potu is an acute attack of violent mania in which the patient must be tied or held, but after the proper remedies are administered he goes to sleep and wakes all right. What I consider the proper remedies are these: Apomorphine in one-twelfth and one-eighth grain doses hypodermically; morphine one-fourth grain and hyoscine hydrobromide in one-hundredth grain doses hypodermically, and bromide of soda in large doses.

In delirium tremens we have a milder form of delirium. In the habitual drinker any temporary excess may bring on an attack, or any

kind of shock or fright; an injury, especially a broken bone or disease like pneumonia or pleurisy. Sometimes a sudden and complete withdrawal of the accustomed drink will precipitate an attack. At the outset the patient is restless and depressed and sleeps badly. This causes him to take alcohol more freely. In a day or two the characteristic delirium sets in, the patient talks constantly and incoherently; he is always in motion and he wants to get "out of doors" in order to attend to imaginary business. Hallucinations of sight and hearing develop. He sees objects in the room, such as rats, mice, snakes, monkeys, etc., and feels them crawling over his body. The terror inspired by these objects is great and has given these attacks the popular name of "the horrors." During this time the patient should be carefully watched, for he is liable to injure himself by jumping out of a window or running away. Auditory hallucinations are not so common but do occur. He hears the roar of wild animals or the threats of imaginary enemies. It is common for him, if he hears people talking, to put entirely different words and different meanings in the mouths of those he overhears. They are abusing him, running down his character or even plotting against his life. In the milder, more chronic forms, where the patient has had the disease repeatedly, the delusions are not necessarily attended by such great fear.

I had a patient once who thought he saw a wire sticking through the keyhole of his door. He sat down by the door and pulled imaginary wires for over two hours, talking sensibly to friends and attendants all the time and showing no signs of fright. Another was the case of an old miller, a steady drinker of many years standing, who, for three years before his death never sat down in a room that he did not see and hear hundreds of chickens pecking corn from the floor, and this was attended with no fright or worry whatever.

In delirium tremens there is much muscular tremor; the tongue is covered with a thick, white fur, and when protruded is very tremulous. The pulse is soft and rapid and readily compressed. There is fever, but it rarely goes over 103°. Insomnia is constant, with utter lack of appetite. A frequent characteristic is the patient's suspicion of his friends, physicians and nurses. He imagines everything they offer him is poisoned, so it is often almost impossible to persuade him to take even water or whiskey. I can recall one case where this fear amounted to panophobia. He trembled near a tree or building—it would fall on him; he sat in the middle of the room—he might fall out of the window, etc. As soon as the patient sleeps nine or ten hours he begins to improve.

In more serious cases the insomnia persists, the delirium becomes in-

cessant, the pulse more frequent and feeble, the tongue dry, the prostration extreme, with death from heart failure. The treatment for these cases varies with the symptoms. In acute mania, with a full pulse, one-eighth to one-sixth grain apomorphine hypodermically will cause a rapid disappearance of the maniacal symptoms (as soon as the nausea and vomiting begin). The patient should be placed in bed and watched night and day, for there is great danger of his jumping out of a window or running away. It is best not to tie the patient if it can be helped, but it is far better to fasten the patient to the bed with a sheet than to have three or four men holding him. At the first you should carefully watch for any complications, such as a broken bone or pneumonia. After the apomorphine has acted I give hypodermically morphine, one-fourth grain, and hyoscine one-hundredth grain, every two hours until sleep is produced. I also use trional or sulfonal to produce sleep. The essential objects of treatment are to procure sleep, get the patient to eating and keep up the patient's strength. The alcohol should not be stopped entirely for several days, but about an ounce or an ounce and a half given every three hours while awake. In procuring sleep I avoid chloral and all its preparations on account of its depressing effect on the heart.

It is necessary to move the bowels freely from the first and to keep them moving freely. I prefer to have calomel in the first dose or two. To quiet the nerves after the first excitement is over I use bromide of soda in 40-grain doses. I give strychnine (one-fortieth grain) hypodermically every four hours and nourish with milk, soft boiled eggs, toast, and beef tea (Valentine's meat juice) and light broths. Delirium tremens was first accurately described by Sutton, of Greenwich, at the beginning of the nineteenth century.

As the years roll by the spreer begins to lengthen his sprees and shorten the interval between them until they overlap and he becomes a steady drinker. We have now reached the stage of the drunkard. Externally, we have a general bloated appearance, the very much enlarged venules on the face and nose, the muscular trembling and the shambling gait; now an utter impossibility to accomplish anything in the morning until the usual amount of alcohol has been drunk. There is irritability of temper, forgetfulness, and a gradual change in the moral character. All of the mental functions are impaired, beginning first with the highest and descending to the lowest; intellectual centers first and then the centers that preside over animal life. The judgment is seriously impaired, the will enfeebled, then imagination goes, then the emotions, the power of speech, muscular movements, and so on descending, the reflex centers of the cord are abolished (causing him to pass urine and feces involun-

tarily) and finally the centers that control respiration and the heart. Of course this last is a description of dementia paralytica, in the very last stages of drunkenness. Sometimes we have an interesting combination of symptoms, known as Korsakoff's disease. There is peripheral neuritis, with loss of memory and pseudo reminiscences—that is, false notions as to the patient's position in time and space, and fabulous explanations of real occurrences. Of course you can have this with various modifications, without the neuritis and with only mild forms of the other symptoms.

The alcoholic is especially susceptible to germ disease. Pneumonia is almost invariably fatal in the alcoholic. They are subject to an especially intractable form of phthisis. This is probably due to the fact that alcohol lowers the tissue vitality, thus enabling the bacteria the more readily to develop and grow. If our alcoholic dies and we perform a postmortem, we will find every organ and tissue in the body seriously impaired. We see at once that its functions have not been half performed. From the gastric membrane to the brain tissue the story is the same. Barthelow says he can describe the effect of alcohol in two words—*fibrosis* and *steatosis*. There is an enlargement of the connective tissue in each organ (*fibrosis*). This presses on the soft individual cells of that particular organ and causes their fatty degeneration (*steatosis*) and final destruction.

In the stomach, the connective tissue cells of the mucous membrane are enlarged and hardened; they press on the cells that make the gastric juice; all are impaired, many destroyed, so that we have perverted function. In the liver there is again growth of connective tissue, with pressure on the liver cells, with perverted function; there is impaired manufacture of bile, impaired storing of glycogen, etc.

In the brain and cord and nerves (in fact in every tissue of the body) it is the same. Dr. Osler says there is more or less thickening of the pia-arachnoid membrane with wasting of the convolutions of the gray matter. In the interior of the brain there is hyperplasia of the neuroglia with the brain cells showing fatty and atrophic changes, and of course there is perverted function of the brain as described above. Alcohol seems to have an especial affinity for nervous matter. It has been found in the ventricles and even distilled from brain tissue, and found in greater quantity there than in any other tissue of the body.

On the average alcohol shortens life about fifteen years—that is those who exceed Anstie's limit of two ounces of alcohol in twenty-four hours will on the average shorten their lives fifteen years.

Alcohol is especially liable to bring on the following diseases: Gout

(this is more apt to occur in England and continental Europe than it is with us, because their wines are heavier than ours); chronic Bright's disease, both the large white kidney and the small contracted kidney; though the latter especially, for it is often called the gin drinker's kidney; chronic topers frequently show a dilated heart and arteriosclerosis; the catarrhal condition of the stomach and indigestion, which has been already described; in old drunkards a very intractable form of diarrhœa, cirrhosis of the liver and peripheral neuritis are diseases that can be especially claimed by alcohol. With peripheral neuritis we sometimes have an optic neuritis, causing amblyopia—defective vision—with contraction of the color fields especially; epileptoid attacks (these almost always stop when the patient gives up the alcohol), and various forms of insanity.

Children inherit the alcoholic craving frequently. Many of the drunkard's children are degenerates, both physical and moral. They are especially subject to epilepsy, idiocy, chorea, and hysteria. Epilepsy, inebriety and hysteria in heredity seem to be almost interchangeable, that is, you will frequently find all three in the same family; or with inebriety in the father you often have epilepsy and hysteria in the descendants.

Treatment:

The *raison d'être* of the periodical drinker has never been found. I know of no satisfactory explanation of the peculiar symptoms of his case. After weeks, sometimes even months, of a perfectly sober life, an irresistible craving for alcohol comes on, and he immediately plunges into a terrible drinking bout; for weeks he may pour liquor down each day to the point of coma, when suddenly there is a revulsion of feeling; he no longer craves alcohol; he positively dislikes it. The odor and the taste fill him with disgust. None of them seem to understand themselves. Just at this point many of them take a great moral credit to themselves over this change that has occurred in them in regard to alcohol. Just at this time, if there is a revival going on in their neighborhood, many of them will "join the church" or some temperance society. And they believe so positively that they will never take another drink, they *know* that they have reformed! And they have—until the next attack of craving. It is this state of the periodical drinker that gives the quack and charlatan their opportunity. If during their treatment this attack of dislike to alcohol comes on the drinker is convinced that the treatment has cured him and will give the strongest endorsement to gold or "three days" cures, and even to that kind of cure which the wife secretly places in the morning coffee.

Now, is there anything that the scientific physician, who wishes to make his money honestly, can offer to the steady and periodic drinkers? Yes, a great deal. He can not make the man over again, but he can stop the craving for alcohol; even prevent its returning, and build him up wonderfully in a comparatively short time. The man is restored, all craving for liquor is gone until he *willfully* takes his first drink. The moment he does this the old craving comes back with all of its original force.

In the treatment of an alcoholic, the sanitarium is almost a necessity. To have him under hourly observation, away from his old associates; and best of all, to have him away from all business worries and family cares, are immense aids at the beginning of treatment. After this, we work for four things: First, to start his secretions; second, to stop the craving (this is almost the same as the first, for to start the secretions to acting normally will frequently stop all craving); third, to get him to sleeping naturally, and fourth, to get him to eating and digesting food at regular hours. First, to start his secretions he must be purged very freely; for a week his bowels must be kept freely open. The first two nights I like to give five grains of calomel, combined with the improved C. C. pills. This is followed early in the morning by a good dose of pluto water or some other saline. The rest of the week his bowels are kept open by the C. C.'s, alophen pills, or some of the milder purgatives. Second, to stop the craving, for a week or ten days, unless there is some contraindication, four times a day I produce a free perspiration by the hypodermic use of pilocarpine. The necessary dose varies from one-twelfth grain to one-sixth grain. I must remark, in passing, that this is an extremely useful drug that the average physician seems to be afraid to use. There is no danger in its use, for even if a poisonous dose is given we have in morphine, atropine, and strychnine, physiological antidotes that almost immediately remove all symptoms.

Other drugs that help to remove the craving are atropine and its congeners. I give my patients a dose of a strong tonic (composed of nux vomica, avena sativa, gentian, cinchona, etc.) every two hours. To this tonic I add a small dose of some of the mydriatics, as atropine, hyoscine, hyoscyamine, scopalamine, duboisine or daturine, for all act alike. Thus of hyoscine I give one eight-hundredth grain at a dose. In the eight doses they take during the day this give them one one-hundredth grain for the whole day, which is not too much. If, for any reason, I wish to use any of the other mydriatics I proportion the dose in the same way. Third, to produce sleep during the first week, when hypnotics are necessary, I prefer trional or sulphonal. You can give these without danger in

rather large doses. For instance, I frequently give twenty grains every hour until five or six doses are taken. I never see any bad effects the next day, save occasionally some muscular incoördination. The patient walks with difficulty, but this passes off with the next night's sleep.

With drunkards I never use chloral or any of its preparations or kindred. There are two objections to these drugs: one, if your patient has any heart weakness (and drunkards so often have) you may find him dead the next morning. The other objection is that on the following day the patient is very much depressed and this depression adds to the craving immensely. I have found veronal sodium a very useful drug and have seen no harm in it.

Fourth, the feeding: I give almost as much milk as the patient will take; either sweet milk or buttermilk, the latter preferred; raw or soft-boiled eggs I use with some caution. I do not give them freely until the tongue is cleaned. This caution is on account of the tendency of eggs to clog the liver. I give malted milk and almost any of the starchy breakfast foods that the patient likes. I have found in cases approaching collapse, Valentine's meat juice an extremely useful stimulant. I give it in twenty drop doses every two or three hours.

UPON THE PREVENTION OF THE COMPLICATIONS OF GONORRHEA.

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The most important step in the prevention of the complications of gonorrhea is educational. Prevent the gonorrhea. The time has come when the medical profession must lead an educational compaign against venereal diseases. We have advanced too far in preventive medicine to continue letting the public stay in ignorance concerning diseases which have caused such widespread suffering and destruction among the human race.

The mothers and fathers of the land must be taught that the salvation of their children lies in teaching them sex hygiene. No boy or girl should be permitted to reach the age of maturity without knowing what to expect. There has been too much false modesty between mother and daughter and father and son concerning this vital subject. The girls should be taught that menstruation is a physiological function which takes place in all normal women. The boys should know that a very decided and definite change occurs in their lives when they begin

to reach the age of maturity. It is much better to have the children learn these things from their parents than from evil companions.

The public must be taught what gonorrhea and its allied diseases are. How they are contracted and how to prevent them. It is a fact that practically all prostitutes have been infected at one time with gonorrhea and the majority of them are infective agents at all times. Therefore, the only safe plan is abstinence.

The dangers and results of gonorrhea must be impressed upon the people. The facts should be made known that about 95 per cent of all operations on women, that over 15 per cent of blindness, that the majority of the sterile marriages, and that many other ills of the human race can be traced to gonorrhea.

Especially should the boys and young men be taught that each violation of the laws of nature exacts its toll, and that gonorrhea and its complications are among the most serious diseases which are common to the human race. The present idea seems to be that gonorrhea is a local disease which can be easily cured and is no more to be dreaded than a bad cold. This impression must be corrected and the true state of affairs presented. When the boys know that heart disease, rheumatism, blindness, suffering, and death are often the results of gonorrhea, then they will hesitate before laying themselves liable to infection. As has been truly said of all reform movements, the boys and the young men are the ones whom we want to reach.

The physicians have a great responsibility in the fight against gonorrhea and its complications. The educational campaign must be led by them because they are the best informed concerning this. Some of the methods to be used are:

First. Lectures. Every physician should accept all opportunities to deliver public lectures upon the subject. Special lectures to school boys are being given in practically all cities in our country by the school physicians. This helps the boys when they need it most. Doctors are being invited by churches and other organizations to address men upon this subject. A great work is being done in this way and more will be accomplished as the plan becomes more general.

Second. Individual instruction. Every patient treated for gonorrhea should be informed concerning the complications. They should know what to expect and be taught what to do as preventive measures. Many complications can be prevented by following this method.

Third. Thorough and systematic treatment of all cases whether mild or severe. We are all familiar with the gonorrheic with his hand syringe and injection. He is given a syringe by us and told to come

back in a few days. He goes off and we do not see him again until he comes back with a complication. This is not due to ignorance but probably to the fact that the average physician has neither the time nor the inclination to give each gonorrheal patient the individual attention that is necessary. Many people are going around with their urine full of shreds who do not know that they still have that old case of gonorrhea which has never been cured. This is sometimes our fault. Of course we know that no case should be dismissed until the urine is clear, but the patient came expecting to be cured in three weeks and we neglected to tell him differently. So when the discharge stopped so did the patient. Who will be responsible when this man marries and infects an innocent woman?

Fourth. By being very careful before giving our consent for the gonorrheic to marry. There is no absolute proof that a patient once infected with gonorrhea is ever cured. There are many tests and we have learned to rely upon them but after all many cases are never cured. The infection of people after five or ten years interval is proof enough of this fact. Therefore, it is a very serious proposition and puts considerable responsibilitity on the physician when he tells his patient that he is well enough to get married. There should be a long interval of time and several negative examinations before consent is given. To reach those who do not desire to consult a doctor, I think, the proposition of requiring health certificates before issuing marriage licenses should be considered. Of course no person infected with any venereal disease should be allowed to get married.

Fifth. Registration of venereal diseases. The city of New York requires all physicians to report to the Department of Health the names and addresses of all patients with venereal diseases which are treated in the charity hospitals and dispensaries, and requests that the private patients be reported by number. In this way the patients who are not able to pay for the treatment or who do not report regularly until cured are followed up and required to take treatment. Thus many areas of infection are cleared up and the spread of the disease prevented. It will be a great step in advance when all cities follow the example set by New York.

DISCUSSION.

Dr. H. D. Stewart, Monroe: The habit boys and young men have of treating their own cases of gonorrhea or of having druggists to treat them because they don't wish their family physicians and their families to know they have the disease, is responsible for most of the complications. Sometimes the disease kills them by infecting the kidneys or the

pericardium or the endocardium. They frequently marry innocent girls and kill them with the complications of gonorrhea.

Statistics of gonorrhea in New York City for fifty years just prior to 1910 show that eight hundred thousand men infected their wives with gonorrhea during this period of five decades. It is the same way all over the country. The doctors should take up this question and fight this evil to a finish. They should tell the mothers about it. If any family physician knows a young man infected with gonorrhea or with syphilis is about to marry or is likely to marry a daughter of the family and the parents of the young lady have confidence in the doctor, he should go to the parents of the girl and tell them the facts in the case. It is said that the large majority of the married women that have to go to the hospitals for operations have been infected with gonorrhea by their husbands.

Excepting abdominal tumors and appendicitis the balance of the women who go to hospitals go on account of gonorrheal infections. When she goes there for an operation the best the surgeon can do is to save her life. She is ruined forever and can not be cured. And it has all resulted from the doings of some scoundrel who did not have sense enough not to marry. When a physician tells a young man he is infected with gonorrhea or syphilis and that he ought not to marry, and that young man marries against this advice and infects his young wife with the terrible disease, he ought to be sent to the penitentiary for life. He is a willful murderer. The doctor ought to inform the people with reference to these important matters. They ought to publish them in the papers. There is no danger of a damage suit. No fellow who is guilty is going to try to bring suit. If he does it will not amount to anything but to advertise his own character.

Dr. J. M. Flippin, Mt. Airy: Gonorrhea in its consequences is more far reaching than any other disease I know of. When I say that eighty-five per cent of the male population is infected with gonorrhea I give you the correct statistics. That means that there are only fifteen decent men out of every hundred, and eighty-five bad eggs. That is the truth. If gonorrhea were a disease that is readily curable there would be very few specialists. They take it up because it is so hard to cure, because of the many complications and the difficulty arising from its infectious character. The misery it brings to others is beyond any man's comprehension. When gonorrhea is seemingly cured you often find a posterior case instead of an anterior case. I believe the plan adopted in Detroit is one of the best plans I know of, and that is to publish all the cases

you have. The next best thing to do is when one is infected to go to the best man on genitourinary surgery he knows of. The ordinary physician may know something about it, but he does not know enough.

Dr. L. B. Morse, Hendersonville: This is very much out of my line of thought in every way, but I am constrained to mention one phase that has been of considerable interest to me. I have watched with increasing interest the crusade in recent years against venereal infections in men. Two years ago or more, almost a bombshell was thrown into society at large by the dean of an Episcopal church in Chicago, wherein he directed the ministers of his parish not to perform the marriage ceremony in any case where the man could not furnish a good bill of health so far as venereal diseases were concerned. That created a great amount of discussion, whether this step was advisable, whether this could be enforced, etc. To show you how far the matter is going, it is only necessary to recall to mind the recent legislation in a State that would be looked upon as perhaps the last in the Union to take action in this subject. California has recently enacted a law by which no man can be married unless he presents at the time he applies for the license a good bill of health from a reputable physician. California is thus the first State in the Union to demand a good bill of health from every man before he enters the marriage relation.

Dr. Oscar McMullan, Elizabeth City: We all know the situation, but what is to be done is the question. Unless we have a law like that in California it would be a very wrong thing, I think, for physicians to tell a girl's parents that a certain young man has gonorrhea. It would put him in a very awkward position to inform a woman's parents of the infection of a patient who has come to him in confidence. I have had cases that gave me a great deal of concern, where I knew that certain young men were visiting certain young women, and I had a great deal of trouble to decide my duty in the matter. Of course, my instinct and my feeling was to inform the people, but the question was whether I had the right to do it.

Dr. F. R. Harris, Henderson: It seems to me that the thing to do is to change our law in this matter. I do not think it is exactly fair for the physician to have to report the case. If we do it will drive them to the quacks. We might have a general State law requiring a license from the State Board of Health and a clean bill of health for every man before he can marry.

THE ADVANTAGES OF THE PERINEAL OVER SUPRAPUBIC PROSTATECTOMY.

A. J. Crowell, M.D., Professor of Genitourinary Diseases in the North Carolina Medical College, Charlotte, N. C.

While attending the Clinical Congress of Surgeons of North America, last November, I found the tendency growing on the part of surgeons to do the suprapubic instead of perineal prostatectomy. This manifest tendency suggested the preparation of this paper, not that any new ideas may be offered or suggestions made to improve upon either of these operations, but to lay stress upon a few cardinal points well known to the medical profession to be very essential in all surgery, as well as to provoke a free and frank discussion of the whole subject.

In the very beginning I will say that every surgeon should do that operation in which he is best skilled, but I will not admit that he is justifiable in continuing to do an operation that is less scientific and offers less favorable results than that possible, simply because he is better skilled in a different operation. I will admit also that in the large adenomatous, intravesicle enlargement with large vesicle stone the suprapubic operation is probably preferable. No sane person would contend for a moment that fine results are not obtained by the suprapubic operation, but I do claim that better results can be obtained by the perineal route.

In this paper we shall call your attention to the comparative dangers in the two operations, the time necessary for recovery, and the complications that may follow each.

In all our surgical operations, we select the one that will give quickest and best results with the least danger to the patient. To do this the observances of certain laws of surgery are essential, one of which is thorough drainage, when such is necessary, and this can best be done from the most dependent point. Drainage is always necessary following prostatectomy.

To say that the permanent results of a perineal operation are equally as good as that obtained by the suprapubic route is not extravagant, judging from my own experience and that obtained by other operators doing the perineal operation. Dr. Young, of Baltimore, who has done more perineal prostatectomies, I suppose, than any man living today, has a permanent result record surpassing that of any man doing the suprapubic operation. Only four cases of perineal fistulæ still persist in his series of 450 cases, four cases in which it is necessary to use the

catheter, where 70 per cent used it more or less before the operation and only three cases of partial incontinence. His mortality in this series is only 3.77 per cent. Eleven deaths occurred in my series of 170 cases or 6.45 per cent, but this represents the mortality of all my prostatectomies, both suprapubic and perineal. Freyer's mortality in 995 suprapubic operations, according to his last report, is 5.52 per cent. I have done a second operation on two of my series for the removal of small lobes either left at the time of or developed after operation. Two cases of incontinence are the only permanent complications I have to report; one of these has complete incontinence and this is the first case I operated upon. The second, which is partial, is one in which I did the perineal operation Dr. Judd was doing some two years ago. This was the fifth and last Judd operation I have done. Not one of my series has to use catheter or has any special trouble in voiding his urine or is greatly annoyed with frequency. Three of this series have from two to six ounces of residual urine, but each of these had from twenty to thirty-six ounces before operation. It is in this class of cases that no operation will give perfect results, that is, cases with greatly dilated or atonic bladder.

Death during operation is rare and comes from shock. I am not yet convinced that a laparotomy with two holes in the bladder—one cut and the other lacerated—is less traumatism and will produce less shock than an incision into the perineum with the removal of the prostate under vision without making even one opening into the bladder. We will admit, however, that the suprapubic operation is often easier and can be done in less time than the perineal, and that too by less skilled surgeons. In fact, the suprapubic operation is a very easy one, but any one skilled in the perineal operation can readily complete it in from twelve to thirty minutes. If the patient is in any condition to undergo an operation at all this is not sufficiently long to cause any great amount of shock and practically never produces death.

Hemorrhage is a complication to which we should give due consideration. In my series I have seen only one death due to hemorrhage and this was in my sixth and last suprapubic prostatectomy. I do not consider hemorrhage necessarily a very frequent complication, but one to be kept in mind. Its control is much easier in the perineal than in the suprapubic route and far less liable to occur. Bleeding vessels can easily be seen, caught and ligated. Firm perineal pressure is all that is necessary as a rule for its control. All operators realize the importance of vision in this operation. Some of them have designed special appliances for illuminating the bladder during the suprapubic

operation. I think vision quite important but no special light is necessary in the perineal operation. If we grant, then, that the danger of this is equal in the two operations—and I do not—they still stand on a parity.

An opening into the peritoneal cavity in the suprapubic and into the rectum in the perineal operation are other complications to be considered. In the hands of the unskilled operator, I suppose, these complications would be about equal, but in the hands of the same operators the opening into the peritoneal cavity would be much more dangerous to life than that into the rectum and especially if the patient is suffering with cystitis, and this is practically always the case. In either of the operations these accidents will occasionally happen with the most skilled surgeon. In fact, I saw the peritoneal cavity opened accidentally by one of New York's most eminent surgeons while doing a suprapubic prostatectomy at the Clinical Congress. I have gotten into the rectum in two of my series that failed to close by immediate suture but were closed by subsequent operation. Dr. Young reports two cases in his series in which urethrorectal fistulæ still persists.

If we admit that these complications are equal in the two operations we will have to look further for convincing argument in favor of the perineal route, hence, I take up convalescence and its complications.

At that age in life in which we are called upon to deal with this condition, the time of confinement to bed is a very important question to be considered. It is a well known fact that old people whose hearts, secretory and excretory organs are impaired do not stand confinement to bed well; therefore, when we are called upon to do any surgical procedure upon them, of whatever nature, the operation that will give the speediest recovery, everything being equal, should be the one of choice. Hypostatic congestion is a complication invited by the recumbent position and necessarily this should be as brief as possible.

In the suprapubic operation the bed of the prostate remains a granulating basin in which infected urine is constantly present. This is a source of infection and prevents healthy granulation. Such a condition calls for special drainage apparatus, for not only the wound but something like 1,500 cc. of septic urine each twenty-four hours. Such apparatus, if it works ever so well, must necessarily act as an irritant, continuing the shock, well nigh too great already for many of these feeble subjects. Those who do the suprapubic operation may be able to get perfect drainage by the use of the various methods recommended for this purpose, but I must admit that I have never been able to get

as perfect drainage from any cavity as that obtained from the most dependent point.

At Freyer's clinic a few years ago I was told by the resident physician that the average time of confinement to bed of their cases following the suprapubic operation was twenty-one days. Some of the most ardent suprapubic advocates claim the average time of confinement to the hospital after this operation is forty-one days. Dr. Young's average in 450 cases was twenty-three days, including the worst cases. In the perineal operation the patient is up on the third day and regains control of his urine in from four to six days. This enables him to remove the dressings himself and void his urine intermittently. This alone gives the perineal operation a great advantage over the suprapubic. I believe no one would contend that such was possible in the suprapubic operation. We very seldom have a patient remain in the hospital longer than three weeks and very frequently leave in the second week following the perineal operation.

We believe that thrombus and embolism are much more likely to occur in the suprapubic operation. On account of the more perfect drainage obtained by the perineal route, stone formation is not so likely to follow the perineal operation. Phosphatic deposits are frequently found on drainage tubes inserted into the bladder in a few days after operation. On their removal, particles of these deposits are frequently left as a nucleus for stone formation.

For the small firm prostate, with little intravesical enlargement, the perineal operation is really easier and far more satisfactory. Freyer has advised against attempting the suprapubic operation in such cases, which are not uncommon.

In conclusion, from my own experience and that obtained by leading surgeons doing the two operations, we think we have demonstrated:

First, that the permanent results obtained by the perineal route are equally as good if not better than that obtained by the suprapubic.

Second, that it is more in accordance with scientific surgery in that you see what you are doing at the time of operation and obtain better drainage.

Third, that complications are less liable to occur, since the time of confinement to bed and hospital is about half that necessary following the suprapubic operation.

Fourth, that the mortality following the suprapubic operation is nearly twice as great as that following the perineal.

Fifth, that stricture of the prostate urethra has now been reported in many instances after suprapubic prostatectomy, and some cases of

complete obstruction of the prostatic space. Stricture should never occur after a proper conservative perineal prostatectomy.

Sixth, for small prostates, not projecting into the bladder, the suprapubic operation is often impossible, while the perineal is easy of accomplishment.

DISCUSSION.

Dr. J. M. Flippin, Mt. Airy: I would like to agree with Dr. Crowell in the route he has chosen to remove the prostate. The doctor has failed to bring out one point I would like to see mentioned in favor of the perineal operation. In the perineal operation the ejaculatory ducts are left intact and still useful. As the doctor has said he is draining from the most dependent portion of the bladder. In the suprapubic route you can not get as good drainage. I am familiar with Dr. Young and have seen him do all kinds of operations of the prostate, and when he used the perineal route I have seen his patients on their feet the second or third day. He does not let any stay in bed over twenty-four hours. That is one of the requisites of success, and prevents congestion of the lungs. He does not have any static pneumonias in his operations. I have done some of this work, and I can say that it is not such a difficult operation. In the perineal route you have your field right under your eye and can see exactly what you are doing, and I thoroughly believe with Dr. Crowell that the perineal route is the route of choice of the two operations.

Dr. Henry Norris, Rutherfordton: Personally I am a suprapubic man, and I do not exactly agree with Dr. Crowell. I believe that if you do the suprapubics in the proper way you have better vision than in the perineal. You drain the apex of the gallbladder; you do not drain the base.

Dr. A. J. Crowell, closing: In regard to what Dr. Flippin says about destroying the ejaculatory duct I do not think it makes very much difference whether they are left intact or not, more than it decreases liability to epididymitis when undisturbed.

FEEBLE MINDEDNESS AND PHYSIOLOGICAL PSYCHOLOGY.

H. O. Hyatt, M.D., Kinston, N. C.

The glory of a country is dependent on the average quality of its citizenship, and depreciates as the average is lowered. When Rome declined before its fall, there were still Romans as noble as in the days of its splendor, but the average had dropped. History repeats itself. Our own country has already proceeded such a distance on the down grade that there are twice as many defectives in this generation in proportion to population as in the last. Scientists tell us that if the present ratio of increase is maintained for one hundred years there will not be enough normal people to support the subnormal. New York is spending from one-seventh to one-fifth of its total resources to take care of its subnormal citizenship.

A period is imminent, such as that presented to our Anglo-Saxon ancestors, who, in addition to their periodic gathering together of the feeble minded and destroying them, instituted laws making two hundred and twenty-three (223) offenses capital, by this means ridding themselves of a large defective population. Our forefathers knew nothing of the Mendelian law of heredity, nor were their sensibilities as refined as ours. They were closer to Nature than we are, and whether knowingly or not coöperated with the law of the survival of the fittest.

Modern sentiment has softened our feelings to such an extent that the majority think the State has no right to take the life of a criminal. Instead of destroying undesirables we are conserving them, to the detriment of the race. This is placing before us the greatest of all the problems that has ever confronted advancing civilization. We must return to what we have grown to consider the brutish customs and laws of our ancestors, to insure us against the multiplication to a dangerous extent of the physically and mentally unfit. Or we must through education and law eliminate the scrub stock and devise better means for the propagation of the desirable units of the body politic.

As a return to ancestral customs would be a renunciation of our higher ethics, which have become so thoroughly engrafted in the minds of our more intelligent people it seems as if it would be an impossibility. The higher ethical ideas and sentiments will never change or modify the working of natural law. There is no use to make the attempt. The law being immutable we must modify social conditions so that natural law will work to our advantage and not against us.

Happily the researches of Francis Galton and the law of heredity as interpreted by Mendel, have given us an insight into what can be accomplished when the intelligent and directing forces of society are sufficiently educated to realize the impending racial peril. Feeble mindedness must be destroyed, not by brutal killings, nor the hangman's rope, nor by sequestering in criminal cells—an educated public opinion is now and always has been the force that leads onward and upward. This is the scientific age. The scientific spirit has taken possession of the social service workers. Everybody must be taught to know that the favorable outcome of parenthood depends upon the wise mating of men and women.

An individual's conduct determines his social status and is directed by the thoughts evolved in his own brain. An anatomically normal brain under wholesome surroundings will receive all the wholesome impressions carried to it by the organs of the special senses. An abnormal brain can neither receive nor register certain impressions that require special areas, because the areas are absent, or, to be more specific, the nerve cells are too few in number or are individually defective. The newborn child is incapable of thought. Intellectual development depends upon education, that is, past environment from which the memory areas of the central nervous system has received and recorded impressions. Said records determine what thoughts the brain will thereafter evolve. Brains identical in anatomic structure and kept under identical environment will always think the same thoughts. A difference in anatomic structure or of past environment will result in a difference in the thought product.

If we accept the foregoing conclusions as true, they bring us face to face with the proposition that size, shape, and structure only are hereditary. If breeding is directed to the development of a high grade or normal brain, we can be assured that such a brain will always produce thoughts that are in harmony with the thoughts of other normal brains under same environment.

One means of studying the normality of living tissue is to study the product of its physiological function. The quantity secreted and the amount of the different constituents of the urine will inform us of the normality of the kidney. A radical difference in the thought product of a given brain from the thought product of other brains under same past environment will indicate a difference in anatomic structure.

The universal acceptance of the theory of mind, that is, the belief in a distinct entity that is resident somewhere in the body, has long been a stumbling block in the way of psychologic investigation. The

reason for this universal belief is explainable by the natural law which we will not discuss at this time. The idea that we want to most impress is the fact that thought, a brain product, is determined by anatomic structure of the nerve cells of the brain and the records or memories left thereon by past environment.

Heredity, as it influences anatomic structure, is the prime factor in determining capacity for either intellectual or physical development. If the kidneys are imperfect, they cannot secrete the requisite amount of fluid, nor take out of the blood those elements whose elimination are so essential to physical well being.

If there is a deficiency in number, size or structure of the nerve cells, on the one hand, they are incapable of recording impressions correctly. On the other hand they are incapable of evolving thoughts that would bear a similitude to those produced by normal brain cells. This forces the conclusion that the physical structure of the nerve cells determines the capacity of the individual's development into a thinking animal.

The researches of Mendel upon which he founded his law of heredity, as well as our researches in embryology, justifies the conclusion that perfectly normal male and female germ plasm each contain a certain determiner element for each and every tissue of the body. When these determiners are of equal potency in the male and female the blend or offspring will present the characteristics of both parents as modified by each other. Whenever there is a weakness in any special determiner in the germ plasm of one parent, the corresponding determiner in the germ plasm of the other parent will predominate, and produce in the offspring in this particular instance a likeness to whichever parent produced the stronger determiner.

If the bone determiner in the blended plasm of a tall man and short woman should be greatest in the male plasm, the offspring will be tall, and conversely if the bone plasm of the female should be strongest the offspring will be short. The same rule will apply to nerve tissue. Parents, both of whose plasm have normal nerve tissue determiners, can not breed other than offspring of normal brains. Ofttimes a parent with normal brain tissue begets by a subnormal coparent apparently a perfectly normal offspring. This might lead to the assumption that the begetting of intelligent children was largely a matter of luck. In many families where there is a number of offspring, it is no unusual thing to see some of them very bright and others feeble minded, all being the issue of the same pair. But for the discovery of the Mendelian law of heredity this would be very perplexing.

In the first case the begetting of offspring with normal or apparently

normal brain development by a normal brained male and an abnormal or feeble minded female, is due to the fact that the determiner for brain tissue in the plasm of the male possessed at the time more than usual potency, and in itself was sufficient to cause normal brain development.

In the second case, where some of the offspring had normal brains and others did not, we will find upon tracing parental ancestry that on both sides there had been a trace of feeble mindedness, producing what under the old terminology was designated atavism, recession, or showing a taint in the blood.

Eugenic research demonstrates that in those cases where no weakness has appeared in five generations, the stock may be considered pure. The females of such stock could be depended on to breed normal offspring when mated to tainted males. A woman with five generations of normal ancestry behind her, irrespective of personal pulchritude, ought to be a very desirable mate for a man who wanted to be assured that his offspring would be normal mentally.

Wherever there is a trace of feeble mindedness in the ancestry of both parents, if there is many offspring a certain proportion of them will hardly escape being feeble minded. While much or most of the germ plasm prepared by the bodies of the parents will be normal, some of it will not be, and the abnormal germ plasm will surely produce abnormal progeny.

From the very commencement of life, it is the perfection or the imperfection in anatomic structure that determines normality of function. Normal and abundant kidney tissue will insure sufficient urinary elimination. The same can be said of liver tissue as to the bile. As thought production is dependent first upon normal nerve cells as registering areas for the reception of outside impressions, out of which thoughts are to be evolved, we see that here, too, functioning depends upon structure. It is physical structure that is hereditary. Thinking capacity depends upon education and environment. The finest and most perfect brain anatomically is incapable of producing any thoughts until after it has registered impressions from the outside.

It is the breeding for size and shape of the trotting horse that plays the most important role in the development of the king of the turf. It is the same rule that has brought about the development of special breeds of domestic animals.

As soon as we realize that as a distinct entity there is no such thing as a mind, that it is thinking—a progressive process that goes on during awakeness, that manifests itself in consciousness and is the directing force to what we call intellect, the way will be cleared to a more ra-

tional and scientific study of the various phases of thought activity in sanity and feeble mindedness. When we fully realize that the nerve cell records determine the quality or variety of thought that can be produced by the brain, we at once see that if the nerve cells are absent, there can be no receptive for a sufficiency of records to produe a high quality of thinking, and that however plentiful the nerve cells may be, if the nerve cell records have been of such a nature that the thoughts evolved by them differ from the usual, we have eccentricities and insanities which can be and are overcome by educational environment—the increment of cell records producing a change in the thoughts evolved.

A careful study of brain contour by cranial measurements, and testings of thought activity by the Binet system, will likely reveal many new facts from which we can formulate a rational system for dealing with insanity, eccentricities, and feeble mindedness.

As racial development depends upon the thinking capacity of the individuals of the race, it naturally follows that our efforts to improve social conditions will most likely be followed by success only after we have carefully investigated the physical conditions necessary for thought production.

The observation of coexisting physical conditions will point the way of procedure. The general conclusion that the central nervous system is the locality of thought production is backed by so many evidences that we need not question but accept it as a proven fact. Given this starting point, it naturally follows that an inquiry into the structure of the brain is the first in order.

The elemental structure of the nervous system is the nerve cell. Anatomic research warrants the assumption that the nerve cells or neurons are divided into two systems. The recording system, consisting of the cells in the areas for the various parts of the body, and the special sense areas, in these areas are registered the records of outward impressions. It matters not how many impressions are retained on the visual, auditory and other areas, there is yet no thought. Thought is something that must be made or generated. It has to be made by something, and out of something. Experience teaches that the greater the number of past records the greater the diversity to the thought process.

Having located the registering areas, where visions are photographed and sounds phonographed, not always in notes and tones, but in whole sentences, the phonographed records of "Thou shalt not steal," "shalt not murder," "shalt not bear false witness," that are imprinted at an early date upon the auditory area of the child, when flashed into consciousness by the associative nerve cells, become a component part of his

normal thinking and, as his guardian angel, keep him forever in after life in the path of rectitude. These areas are aggregations of numerous nerve cell bodies. They bring us a step nearer to the solution of our mystery.

The thinking neurons, which are mostly in the associative areas, constitute the inner temple where the cell bodies under the stimulus of an adequate blood supply generate thought. The axones of the thinking cells gather up from the recording cells impulses which are carried to the cell bodies of the thinking cells and thoughts are mediated. The ability to think depends upon two sets of nerve cells—the recording and the mediating. It is in the recording where the records remain. As records are increased by daily education, so is the thought process expanded. It is the acquisition of new cell records that determines intellectual growth. It is because of this that the observing individual gains more than the inattentive.

There are many psychologic facts to justify the belief that the records on the recording cells are practically permanent. We all know that when we are gaining knowledge day by day along any particular line, that our thoughts or opinions change on the particular subject as fast as we acquire knowledge of new facts.

Thinking is a continuous process, a progressive changing; while we may rethink the same thought, there is no evidence that a thought leaves any record on the thinking cells, their whole function being one of mediation.

Mechanical arrangement while forming, so to speak, the physical basis of thought, is only one of the necessary conditions for its evolution. The blood supply is of prime importance. Its quantity and quality are determining factors. In conditions of cerebral anemia, as during sleep, there is no thought or consciousness. Surcharging the blood with toxic material as in anæsthesia produces a condition of oblivion. Even the trend of thinking responds to blood conditions. Small quantities of alcohol in the blood will make the sombre and gloomy hilarious, giving a key to the reason why some people so easily fall victims to alcoholism. Disturbances in the functioning of the thyroid gland cripple the thinking capacity of the nerve cells, because of the consequent blood disturbances. Retention of elements that ought to be eliminated and absorption of intestinal toxins produce the toxic insanities. Thus we have demonstrated that normal anatomic structure and healthy physiologic function both have to be near perfection to always produce sane or sound thoughts.

As previously stated, it is size and shape and structure only that are

hereditary. Thinking is an acquired function. It is an impossibility prior to birth or the reception and registration on nerve cells of impressions carried from the outside.

The wonderful Helen Keller, who was born deaf, dumb, and blind, and who has attained such great literary fame that she felt that she was in position to refuse a five thousand dollar annual endowment from Mr. Carnegie because of her ability to earn that much by her own efforts, thus describes the workings of her own brain before she was educated, her brain then being barren of records.

"Before my teacher came to me I did not know that I am. I lived in a world that was no world. I cannot hope to describe adequately that unconscious yet conscious time of nothingness. I did not know that I knew aught, or that I lived, or acted or desired. I had neither will nor intellect. I was carried along to objects and acts by a certain blind natural impetus. I had a mind that caused me to feel anger, satisfaction, desire. These two facts led those about me to suppose I willed and thought. I can remember all this not because I knew that it was so, but because I had tactual memory. It enabled me to remember that I never contracted my forehead in the act of thinking, I never viewed anything beforehand or chose it. I also recalled tactually the fact that never in a start of the body or a heart beat, did I feel that I loved or cared for anything. My inner life was then a blank without past, present or future, without hope or anticipation, without wonder, joy or faith."

"It was not night—it was not day,
But vacancy absorbing space,
And fixedness without a place,
There were no stars—no earth—no time,
No check, no change, no good, no crime."

In the study of the insanities, eccentricities, and the feeble mindedness the physical structure of the individual is of first importance. Any imperfection in any of the organs of the special senses will prevent truthful transmission of outside impressions. Any deficiency in the special nerve areas will prevent truthful recording. A lack of a sufficiency of nerve cells in the association or thinking area of the brain will make normal thinking an impossibility. With normal anatomic conditions, the blood, the fuel furnisher of physiologic activity must be in right condition to get the best results from cerebral activity. The whole person is concerned in thinking.

Dogmatic assertion has never been considered the best method of teaching. It is resorted to on this occasion, because the time of this So-

ciety is limited. The time that would be required for a presentation of the facts and the reasons why of these conclusions would be long and tedious. If these conclusions are logical, they will gain acceptance. If not, they may excite controversy during which there will be a marshaling of physiologic and psychologic facts for and against. Out of the contention we may find something that will bring us nearer the solution of the problem. A rational verdict requires the sifting of testimony. No theory is worthy of acceptance that does not account for all phenomena concerning it. I am not asking acceptance of this theory until after it has been submitted to most rigid scrutiny. If the correlation existing between the anatomic arrangement of the neurons and the known facts concerning the effects of education upon the thinking faculty of the individual do not justify our conclusion this theory is wrong. If they do, it may be right.

The points which seem to me to be borne out by facts are: Size, shape and structure only are hereditary; that impressions are carried from the outside and registered on the nerve cells; that under a sufficient blood supply other nerve cells in the associative area mediate these impressions into thought.

DISCUSSION.

Dr. J. Allison Hodges: I would not intrude myself again before this audience except that I rise to perform a duty and answer your call to discuss this paper. I want to say that I felt that in this State that I love there was genius and skill, and now I know there is brains. This is a brilliant paper, gentlemen, and it is a paper which is evidently the outcome of mature thought and consideration, and, moreover, great study. I believe I can speak in a measure appreciatively upon this subject, because for years I have thought upon it and studied it, and the conclusions that have been reached by the doctor are, in my opinion, sane and conclusive, though the whole subject is intricate, and not yet entirely understood.

None of us probably recognizes more than the medical doctor the ideas that the great mass of people have regarding heredity and its influences, and if every one in this State and at large could assimilate the very terse and very concise, and yet very broad summary that the doctor has made relative to the value of heredity, I am sure it would have great sociological and economic weight with these people. In other words, if you translate what the doctor has said, outside of the technical and scientific terms, it means that, with the exception of his first condition we are creatures of environment. Now, then, if we are creatures of environment it does not mean that we have to go back to

our ancestry and simply have the habits and characteristics and marks of that ancestry; in fact, that in an economic way we can be satisfied with the achievements of the past and for that reason do not have to concern ourselves with the exigencies of the present, and in that way bring about in this country a state, as it were, of contentment and supine satisfaction with ourselves, that would never make for the uplift of this community or any other. If this theory were known and accepted it would be of economic value to our people. Furthermore, this brings a point of great importance to us as medical practitioners, in that we should instruct more than we ever have done in the past, the mothers of this generation, for if there be any fact on earth that is a sad one in the advance of civilization, it is that more neurotic mothers probably are giving birth to children in this time of stress and strain than ever before, and it is a fact that neurotic mothers are the most deplorable educators of youth. In that way this question has economic bearing on our State and civilization. Furthermore, it has a bearing upon the teachers of our land, who are to go forth and evolve, as I attempted to show you in a measure night before last, the new system of education. Where did I catch that vision? It was from the story of the simple girl read to you here today. When I read her book, her autobiography, I caught the first inspiration of a newer and higher life that might be given to children. That wonderful woman, Mrs. Macey, who has trained and developed and made that life the outgrowth of beauty and harmony and usefulness it is today, trained that child along the methods of which I would have spoken to you, not along conventional lines, not along lines of method and scholastic requirements, but along lines in which the individual had every opportunity to blossom as the flower of the field, and where its beauty and its harmony were developed simply by the incidental relations that hour after hour were brought to this child. Never once, said that wonderful woman who taught Helen Keller, did she attempt to divert that child from a thing which she wished to understand, but that once finding out the desire in her heart, her hours and days were spent in an attempt to unfold and reveal to that inquiring intellect everything that could be learned. That child was the product of an environment that was almost holy, because it was directed by that wonderful woman, who, to my mind, is the very personification of what we would have the mothers of this land to be, teaching the children the beauty and the harmony of this life. The first impression made upon this receptive mind was at the well in the yard, where it was impossible for her teacher to teach her the name and the significance of the mere matter of water. Getting her to taste it and drink it was

not sufficient, but the teacher had the child put her hand in the water bucket and drink the water and use it for other purposes, and in that way taught her the very lesson the doctor has brought before us today: that we are from the earliest and tenderest years of our lives the very children of environment. That training, provided the environments are correct, is no difficult matter, no obscure matter, simply one of patience, of untiring enthusiasm on the part of the teachers, be they parents or what not.

If any man on earth wishes to spend an hour in which his very heart strings will be touched, and wishes to see before him upon the stage the most dramatic thing that has ever appeared to him, let him listen to the simple, childlike, high minded, Christian talk of Helen Keller, and see that cold, pulseless mind, that once, as the doctor has shown you here today, responded to nothing on earth, tell you of the sweets of liberty, of the freedom that she enjoys, of the life she lives in the upper world, and of the good that she would do to her fellow beings, because she feels the gladness and love that is in her heart. Never have I seen or heard a more dramatic incident, a more humanly interesting spectacle, than Helen Keller telling of her life and of her desire to be of service to human kind. The brain that once was void is now filled to overflowing with its multitude of thoughts, though her eyes are still sightless and her ears still unstopped. I say to you that while none of us in the practical application of this theory may be able to work it out now, yet the application of this whole theory is to be made by the doctors and the mothers and the teachers of this generation for the betterment of the human race, along the lines given by the doctor here today and exemplified in the life of Helen Keller, for the good and uplift of the human race. I bespeak for you that you absorb and ponder well what the doctor has so plainly and interestingly said, and practice it and teach it to your children and to your children's children, for the force of youth is the great force, the opportunity of childhood is the great opportunity that must be the lever that is to bring us to the higher civilization, and you doctors in this higher field of usefulness that is open to you have an opportunity that is unsurpassed, and I know you will meet its exigencies.

Dr. J. M. Parrott, Kinston: I shall not attempt to discuss this, to me, doubly interesting paper. I am very much interested in it, because of two reasons; first, it is the result of a long period of very hard study given by a very careful student; second, there is a considerable difference in the age of the author of that paper and myself. He was the family physician of my father before I was born. I would like to hear

it discussed further by men who are able to discuss it. I would personally be glad to hear from Dr. I. M. Taylor, of Morganton, as I am sure the other gentlemen would.

Dr. I. M. Taylor, Morganton: I thank Dr. Parrott for the conclusion that I am prepared to discuss this paper, and it only brings from me the confession that it would take me several weeks to prepare myself to indorse Dr. Hyatt's position, and several months to controvert it, so I must beg you to excuse me at this time.

Dr. G. W. Choate, Rockwell: I would like to hear our worthy President discuss this paper.

Dr. J. P. Munroe, Charlotte, President: Gentlemen, the President does not feel that he ought to discuss papers unless he vacates the chair, and the time is so limited that he does not feel that he ought to do so. This is along the line in which I am doing most of my work at present, and I am therefore very much interested. We ought to thank Dr. Hodges for his most excellent discussion of the paper.

PELVIC TROUBLES IN THE FEMALE.

A. Bascom Croom, M.D., Maxton, N. C.

To fully realize the importance of the subject before us the physician has only to run through his records of cases or to refresh his memory on recent cases, but especially the chronic ones—in other words, to open his eyes. It is, of course, necessary that a case should be thoroughly studied before any intelligent diagnosis can be made; and the more thoroughly one goes into the study of his female patients the more pelvic troubles does he find. Many women suffer from "rheumatism," "neuralgia," "nervousness," "headache" and other vague symptoms and have never been told that they have a pelvic organ, when in reality the trouble is located in the uterus, tubes or ovaries, and easily so after investigating this part of her anatomy.

It is a fact to be regretted that these women remain for months and even years without a knowledge of their true condition and incidentally without the least relief. The first point, therefore, which I would have impressed is a thorough investigation and consideration of all symptoms, and a complete study of the case, which means an accurate diagnosis; and after this comes the point of interest to the patient—What prospects for a cure and how is it to be accomplished?

But let us consider the diagnosis more carefully and see what is before

us here before attempting the treatment. A popular classification of inflammatory troubles of the pelvis is as follows:

(1) Gonorrheal infection, (2) puerperal infection, (3) tubercular infection, (4) corpus luteum cysts, (5) ectopic pregnancy, (6) abscess of vermiform appendix, (7) infected dermoid and ovarian tumors. Of these the gonorrheal plays by far the most important part and next is the puerperal infection.

Symptoms:

Pain and other subjunctive symptoms are to be considered, while the objective signs, as leucorrhea, location of a mass, etc., are more important. The temperature and other physical symptoms are important indications of the general condition and often decide definitely the character of the lesion. It is, therefore, by a careful examination and consideration of all points that we arrive at the correct diagnosis.

The prognosis will depend upon the lesion found, the treatment adopted and especially upon the question as to how early or at what stage we get to work.

Treatment:

The treatment may be divided into (a) preventive, (b) expectant, (c) palliative, and (d) radical. Preventive measures come first, of course, and are most important. How are we to prevent pelvic disease? A great many come from puerperal infection, but far more from gonorrheal.

In the treatment of our own confinement cases we should use every possible means to prevent infection and other complications, and this is summed up almost in one word—"asepsis." The placing of obstetric practice on an aseptic basis and treating all cases as a surgical operation has done much to reduce pelvic troubles and would do more if the general man would exercise more scrupulous care, using sterile sheets and towels and rubber gloves, following a thorough scrubbing as he would in doing a laparotomy. Perineal pads should be used during the ten days following the delivery. I believe it is a duty we owe the public and especially the suffering women to advocate and insist upon the annihilation of the midwife. This must come by degrees and I have suggested as a starter in this direction that all women who practice midwifery be required to report to the municipal or county health officers to receive at least a scrub brush and a bar of Octagon soap, with instructions to let the patient alone and leave her to nature. From this we can go further and ultimately put the ignorant midwife with her streptococcic fingers out of business.

As to the expectant and palliative plan, I have had in some cases good results and a clearing up of acute symptoms for several months, from rest and diet with the old turpentine stupe method. This is only to be employed in certain selected cases.

Radical measures are inevitable to effect a complete cure in any inflammatory pelvic condition which has run a long time, though it is remarkable to note in some of these how well nature takes care of the situation in the matter of walling off an abscess or the absorption of a spontaneous rupture. Pus appendix or an acute pus tube are too serious matters to take any chances with except when the physical condition of the patient would contraindicate radical interference. The question of radical interference and certainly the less extensive measures are so simple that there is no longer an excuse to let these cases go under a compromise treatment, as medicine three times a day for relief of symptoms, with no hopes of anything permanent.

After deciding upon a laparotomy in an acute inflammatory condition there is still the consideration of conservatism or how far the operation should go. This is almost impossible to decide accurately before exploring. In gonorrheal infection there is usually an involvement of everything in the pelvis if the infection has been present more than a few months. However, it is a question of judgment very largely and experience will show how far to go and how much to take out. The real object of this paper, though, is to call attention to the existence of these conditions with a hope that, having our minds refreshed on the subject, we will look more carefully into such cases and especially that an effort be made towards the prevention of these conditions. I hope, therefore, that we will institute a system of practice and routine examination so rigid that within the next generation there will be no such thing as development of cancer from a torn cervix neglected at the hands of the attending obstetrician or the failure on the part of the gynecologist to recognize and sufficiently impress upon the patient the absolute necessity for an immediate repair; that no pelvic inflammation will be found as a result of puerperal infection, because we are thoroughly aseptic in our deliveries; that no gonorrheal infections are to be found, because we have a law protecting the innocent women of our country.

REFLEX VOMITING AND UTERINE DISPLACEMENT: A CLINICAL STUDY.

T. Marshall West, A.M., M.D., Fayetteville, N. C.

It is with a deep sense of the compliment paid me, a feeling not unmixed with embarrassment, that I come before you today at the invitation of our Chairman. For as I look into your faces I see some men old enough to be my father and the major portion, if not all of you, of sufficient experience to be my teachers; men who bring to this meeting the strength born of years spent in practical work, and in consequence a mature judgment and professional acumen of which the young man can not boast.

However, the essayist has not come with any elaborately worked out theory to demonstrate, nor can he hope to do more than contribute his mite to the carefully prepared and interesting program of the day. My offering deals with certain phases of a subject as old as gynecology itself, and may not even escape the condemnation of being trite. As the basis of this paper I have chosen for discussion a case possessing some unusual features which furnish me with the excuse for bringing it to your notice. I am well aware that some place little credence in the supposed relation of cause and effect existing between disturbances of digestion and malpositions of the nongravid uterus. So little is known of the physiology and pathology of the nervous system, particularly of the sympathetic, that in dealing with its complicated workings we are of necessity plunged to some extent into the realm of speculation, and care must be exercised that we do not allow our enthusiasm in support of some pet theory to run away with our judgment. In the present instance we shall confine ourselves to faithfully recorded clinical data and upon these base our conclusions.

On August 7, 1911, a lady, aged 34 years, came to St. Luke's Hospital, Fayetteville, complaining of "weak stomach," from which she had suffered at intervals ever since puberty; was a healthy, normal child up until then, but soon after the establishment of the menses she began to reject her food as each period approached, the disturbance lasting about ten days or two weeks, following which there was an interval free from symptoms; mental or physical fatigue always made matters worse. She was at school at the time but was finally compelled to abandon her studies and place herself in the care of a specialist, under whose treatment she remained for eight months or more with practically no results. She knew few details of the treatment, but a uterine displacement was evidently recognized, as pessaries were frequently adjusted under anæsthesia; a strict dietary regimen and varied medication was of no avail. She finally abandoned all attempts at treatment. There

were occasional periods of relief which, however, did not last long. She married at the age of twenty-six and has had two children. During her pregnancies she vomited daily for about three months, but was comfortable from then on until delivery. After the birth of the second child she experienced no discomfort for about five months, during which time she gained rapidly in strength, but the vomiting returned at the end of that time.

Throughout the six weeks previous to entrance she had practically no respite and, very little food being retained, her strength was at a low ebb. A few minutes after eating, no matter how faithfully she dieted, there was uneasiness and slight nausea, and then, without retching, the stomach was emptied by several efforts at intervals of a few minutes, the vomitus consisting first of food and later of bilestained fluid. At times small quantities of nourishment were retained, but not often. No pain was experienced and there was no history of pyrosis or hematemesis. Appetite fair; rested well at night. Though under weight and weak from her experience, the patient was not emaciated. There were no symptoms suggestive of the neurasthenic.

Physical examination showed a general lack of tone, but heart and lungs were sound; the stomach was dilated and the walls atonic, the lower border one finger's breadth below the umbilicus. Slight tenderness in the epigastrium but no other sensitive points in the abdomen; considerable tympanites present, and there were fecal masses to be felt in the colon. The perineum was intact. The cervix, pointing slightly forward, was swollen and eroded from leuchorrhœal discharge. The fundus uteri lay in the posterior cul de sac, the entire organ enlarged and boggy with greatly relaxed supports; adnexa apparently normal.

Temperature normal, pulse about 80. Stomach analysis showed absence of free hydrochloric acid and a total acidity of from 15 to 20 points with no lactic acid and no blood. Urine and blood normal, save for high indican content in the former and slight deficiency in hemoglobin (80%) in the latter. No blood in the stool, but large quantities of mucus, numerous motile bacteria and trichormonita intestinalis.

Aside from acute conditions which do not concern us in this instance we know that vomiting may be due (1) to organic lesions of the stomach itself, (2) to toxic sources, (3) neurasthenia, (4) reflex disturbances from morbid states in remote organs.

Organic lesions can be thrown out in this case from the history, absence of pain, fullness, hematemesis, and the gastric findings as a whole. The urine being normal and the blood picture and the temperature curve likewise so, a toxic origin is disproved. The patient shows no evidence of that morbid pleasure in the recital of her trouble that ready response to suggestion meets with in the neurasthenic. On the contrary she takes a hopeful view of her case and is not discouraged at the prospect, though the trouble be of such long standing.

The vomiting in this instance is marked by two distinct characteristics—chronicity and periodicity. When one symptom persists for a long time and is uninfluenced by local treatment and no lesion can be demonstrated we can be pretty certain that we are dealing with a neuro-

sis. The stomach is at the center of a great nervous plexus with branches extending widely, connecting it by the sympathetic system with remote organs. It may be profoundly influenced by morbid conditions in these localities, particularly if the nervous balance be more finely adjusted than usual. Headache, mental shock, pain, all may bring on reflex irritability of the stomach. Ewald is authority for the statement that normal menstruation causes retardation of gastric digestion and that chronic gastric disturbances may follow disorders of the female sexual organs.

The periodicity of the symptoms naturally focuses our attention upon the pelvis in this case. Here we have an engorged misplaced organ rendered more irritable and sensitive from its increased blood supply. It is a matter of familiar experience that the displaced uterus is more sensitive than the normal, due to the associated low grade inflammation and consequent pressure on nerve endings. Hewitt says: "My own experience is that the reflex system now under discussion is almost invariably associated with and I believe dependent upon abnormal conditions of the uterus, consisting of undue softness, congestion, and alteration in shape, all more or less associated." He further remarks that a general feebleness is in many instances the basis as well as the accompaniment of more strictly local pathological changes. Our case admirably meets these conditions. The long continued vomiting has sapped the patient's vitality, bringing about a nervous unbalance and susceptibility; the vomiting increasing the irritability and it in turn responding to weaker stimuli.

For over two weeks the patient was treated faithfully by diet, sedatives, colonic flushings and a general tonic regimen with little or no success. The patient came to operation on August 22d. Except for slight pericecal inflammation and a general lack of gastrointestinal tone the abdominal contents were normal. The uterus was soft, enlarged and boggy, the fundus lying in the position revealed at the time of physical examination; the supports were very much relaxed; the adnexa were normal and there were no adhesions in the pelvis. The uterus was curetted and restored to the normal position by the Webster-Baldy method. The appendix, though normal, was removed. The patient did not vomit after the postoperative discomfort subsided, which was in forty-eight hours. Convalescence was uneventful and she began taking nourishment regularly and without discomfort except for some flatulence, which was corrected by appropriate means. Menstruation returned on September 2d and was unaccompanied by unpleasant symptoms. When last seen (six weeks ago) she had enjoyed excellent health,

though for a short interval she had a temporary return of the vomiting following a period of costiveness and overwork, two things against which she had been especially warned. Treatment was promptly effectual.

Search of the literature at our command yields little bearing in detail upon the subject. Grailey Hewitt is the most ardent advocate of the theory and in clinical lectures (*British Medical Journal,* June and July, 1886) reports nineteen cases associated with a marked degree of flexion chiefly of the anterior type, in which some of the patients were in a critical condition. The pessary was employed with gratifying results in all. In his series the vomiting lasted from a few weeks to two years.

Ewald mentions a case of distressing ptyalorrhœa and vomiting having for its basis a retroverted uterus the correction of which was followed by immediate relief.

Kirsh recognizes a type of chronic vomiting associated with pelvic anomalies, chiefly retroflexions which he terms "dyspepsia uterina."

Hewitt's views are best stated in his own words: "Again to take the case of the nongravid flexed uterus: What is the nature of the irritation which sets up the vomiting? Is it not the compression of the nerves imbedded in the uterine tissues at the seat of the flexion? It seems to me that it must be so. It is likely that I may be here met with the statement that this sickness is due to the associated inflammation and that the flexion has nothing or little to do with it. But the associated inflammation, granting it to be present, is readily another of the effects of the flexion, for the same circumstances which give rise to the pressure on the nerves at the bend of the uterus give occasion to an obstruction of the circulation in the organ * * * and this obstruction is the essence of the physical condition described as inflammation of the os. Certainly it is generally the first and primary cause of such inflammations."

He further claims that there is sclerosis of the tissues in the neighborhood of the bend, especially at the internal os, and that this sclerosis interferes with the normal elasticity and expansive power of the organ. In some cases the sclerosis is so marked that a considerable effort must be exerted to straighten the canal and then the flexion promptly returns when the instrument is withdrawn.

We believe a valuable hint may be taken from these facts relative to certain instances of hyperemesis gravidarum. If in the nongravid state displacements excite such obstinate and serious reflex disturbances, how much more susceptible might the patient not become when pregnancy supervenes. No one etiological factor is at the bottom of any case of pernicious vomiting, but there is a well recognized reflex type associated

with pelvic anomalies as is admitted by Williams, Hunter, Frank, and Hewitt. The diagnosis can be made by exclusion and appropriate measures may be adopted without resort to the interruption of the pregnancy as is sometimes deemed necessary in the interest of the mother. In any case of stubborn vomiting not amenable to the usual treatment it would seem well to examine the pelvic organs for possible sources of reflex irritation and act in accordance with the findings before resorting to the induction of premature labor. The reported case illustrates the fact that a relatively simple abnormal state of the female reproductive organs may give rise to a distressing and persistent symptom through the medium of the sympathetic nervous system.

In dealing with any neurosis all sources of possible irritation must be faithfully investigated and corrected and the pelvic contents should not be overlooked while we are seeking for a solution of the problem.

DISCUSSION.

Dr. E. M. Long: In the case of a woman that is pregnant, and examination showed that she has a badly misplaced uterus, would you deem it advisable to operate for a misplaced uterus before emptying the uterus?

Dr. West: I would say no, if anything else could be done. A lady consulted me in regard to persistent vomiting in the first months of pregnancy. She was advanced about three months. She told me that she always had trouble during her pregnancies up to probably the fifth month. Being a patient of mine, I knew that she had a lesion in the pelvis, and I had frequently urged her to have the trouble corrected. I used the ordinary medical means, and later I used a Hodge's pessary with almost immediate relief, the perineum being sufficiently intact to give support. My point was to bring out the fact that a very slight lesion may account for a very persistent vomiting.

RADICAL AND CONSERVATIVE MANAGEMENT OF SOME OBSTETRICAL PROBLEMS IN GENERAL PRACTICE.

Roscoe D. McMillan, M.D., Red Springs, N. C.

It is not my purpose in this article to take up in a categorical manner the various obstetrical problems encountered by the general practitioner, but merely to select from this broad field a few of the questions involving doubt and uncertainty which so often confront us.

First. In regard to the country midwife. So much has been said upon this great evil, and absolutely nothing done by our profession towards its elimination, that only a few words will suffice to pass it

over. Our last General Assembly provided us with the vital statistics law. This, in my opinion, will lessen to a great extent the midwife problem, as these statistics will show the number of cases delivered by midwives and by physicians. The number of deaths of mothers and of children, the appalling effects of ophthalmia neonatorum, or what not. This, I think, will be the greatest help towards educating the public as regards elimination of the country midwife, the greatest menace to the general public in our State today.

The demands made on the general practitioner in this branch of medicine make it one of the most tedious, painstaking, and difficult branches of our profession, not only in this light, but sociologically as well. I mean we, as physicians and guardians of public health, can do much to lay the foundation for encouragement along this line. Preventive medicine is one of the highest aims for which we are striving in this scientific age. It is a well known fact that we all live too lavishly, eat and drink to excess. This brings us to another problem, that of early and late marriage. Encourage early marriage by all possible means. We all know a woman has a much easier time if she bears her first child before she is twenty-six years of age. After this age the dangers to mother and child are, as a rule, greater. In this country the marriage age is too high. The young man spends his money lavishly on high living and puts off marriage; time passes on; he contracts a case of gonorrhea, thinks he is cured, marries, innocently transmits it to his wife, and she lives a life of misery the remainder of her days. Encourage early marriages, and require a medical certificate from the man before he is allowed to marry any woman. If some of these things were gone into more deeply the great problem of radical and conservative obstetrics would not be so large a field as it is today.

While it may be true that the management of normal labor demands but little knowledge of obstetrics, and that childbirth, under most circumstances, will terminate favorably, it is nevertheless true that nothing but a thorough knowledge of obstetrics will qualify a physician to meet the difficulties that arise from time to time in the practice of this branch of medicine. Progress in this specialty has advanced in the last few years to such an extent that no condition arising from pregnancy, labor or parturition is without a remedy. I do not say that the proper thing is always done, or that any of us are so skilled as never to fail. We have all met conditions that were trying in the extreme and have found it necessary to do the best we could under unfavorable circumstances. Often we have looked back on some of these cases with considerable regret.

Emergencies, such as hemorrhage, serious symptoms of toxemia, eclampsia, dystocia and others are often encountered under circumstances giving no opportunity to do aseptic surgical work, as compared with a well equipped operating room, with trained assistants. In all obstetrical procedures, asepsis is the ideal method to be followed in the management of any case; not only asepsis, but antisepsis, as well, for we are dealing with a field immediately proximal to the birth canal that can not be sterilized and can not be kept clean at all times.

Of great importance to the present as well as future welfare of the patient is a correct diagnosis of the presentation and position of the fœtus, and the relation of its size as compared with the mother's pelvis. Obstetrical diagnosis is of far greater importance and far more worthy of serious consideration than is given to it by most physicians in general practice. If more attention were given this the damage to infants and mothers would be greatly lessened. Also such complications as dystocia, malpresentation, malposition, placenta prævia, symptoms of toxemia, etc., would be recognized early enough to permit removal to a well conducted hospital, not as a last resort, but in ample time. This can only be done by careful observation of our patients and making correct and early diagnosis.

I venture to say that the majority of physicians in general practice do not like obstetrics; the remuneration is comparatively small for the patience and skill required. As a result a great many physicians take obstetrical cases with the sole object of retaining the family practice. They do not appreciate the responsibility, they do not study their cases enough to have any apprehension of trouble. They go on and on until some unthought of complication suddenly arises that demands presence of mind and skill far beyond that possessed by the average general practitioner.

To what extent shall we be radical, and to what extent shall we be conservative in the application of forceps? This sometimes taxes the skill of the physician to the utmost. It is not easy to select the right time to interfere, knowing so well that Mother Nature is the best doctor we have. It has been said that we should wait to see what the woman is able to accomplish, not what she is able to endure. If we wait until the signs of danger to the mother or child are present, very often the damage has already been done. It is a shame to let a woman suffer many hours in the second stage, waiting for the danger signs to appear. I have made it a rule when the head has descended well on the perineum and makes no progress for two and one-half hours, to apply forceps. Watch carefully the occipitoposterior presentations. Leave

them to *Nature* as long as possible. When you are sure rotation of the head is arrested, prompt delivery by forceps is indicated, remembering when the head is arrested at the superior strait version and extraction should be resorted to.

Next comes the large number of complications which affect the mother, and secondarily the child. Eclampsia, pneumonia during labor, infection during labor, tuberculosis, œdema of the lungs, placenta prævia, prolapse of the cord. All are clearcut indications for forceps.

Scientific obstetricians, even if they allow theoretical teachings to influence them in their other cases, will admit that safety to mother should take precedence over safety to child when it is possible to save but one, and that only at the expense of the other.

Deficient Uterine Contractions: While I admit this does occur occasionally, it is not so serious. The contractions may weaken at times, indeed may cease entirely, only to rest a while and return with renewed activity if given time: only rarely does it give sufficient trouble to justify forceps.

Every case of contracted pelvis is a law unto itself demanding its own particular consideration. Some one has said, "Forceps fit the contracted pelvis like the fist on one's eye."

A marked contraction of the pelvis has but one indication—Cæsarean section. The lesser and more moderate degrees puzzle the obstetrician greatly and not all agree as to the best course to pursue. Occasionally success follows the use of forceps and a living child is dragged through a cramped pelvis. This, however, is bad obstetrics; even if the child lives it is usually the recipient of some permanent injury, and perhaps dies in a few days.

Lastly, I beg you watch your obstetrical cases more carefully. If you see and recognize these cases of pelvic contraction, or complications whatever they may be, early enough, something may be done to save many valuable lives that go to their death annually on account of careless obstetricians.

REPORT OF A CASE OF CÆSAREAN SECTION.

K. G. Averitt, M.D., Cedar Creek, N. C.

The operation of Cæsarean section has become so common that it does not attract the attention it formerly did, but the following case is of interest owing to the unusual features, the prolonged efforts at version and delivery, the distance the patient had to be taken to get her to a hospital, and her uneventful recovery.

On the night of April 18th I was called to attend Mrs. N——, who was said to be about seven and a half months pregnant, but whom I found to be much nearer the end of gestation. I had never seen the woman before, but on my arrival I found her to be a young woman 21 years old, weighing about 125 pounds, and with a normal pelvis so far as I could judge. She had been in labor all night when I arrived, about midnight, and was rolling and tossing with pains, and to the ear and eye she was well advanced in labor.

As she was making much complaint and begging for help I made an examination as soon as I could clean my hands, and to my dismay found a hand presenting at the vulva. As this is no unusual complication and I had always been able to perform version in such cases, I still thought I was master of the situation, but when I replaced the hand and attempted version I found I was "up a tree," as the saying goes. The cervix was fully dilated, but when I attempted to pass my hand into the uterus or to manipulate the child in any way the contractions were so great that it was impossible to make progress. I gave a heavy hypodermic of morphine, thinking this would relax things, but the effect was *nil,* and after working with her for a couple of hours and being unwilling to give chloroform or ether without an assistant, I called Dr. P. N. Crumpler, of Roseboro, N. C., in consultation. He arrived early on the morning of the 19th and, like myself, thought we could give chloroform, turn and deliver. He gave the anæsthetic and I tried version, but when I passed my hand through the cervix I found the child so tightly jammed in the pelvis that I could not secure a foot or the head. After tiring at the attempt, Dr. Crumpler took my place and I took charge of the anæsthetic. He worked faithfully till he gave out, and then we took it turn about till about noon.

Having made no progress in our efforts at noon, and the woman having been under chloroform all the time, we decided it was impossible to deliver this way, and as we were convinced the child was dead we decided to mutilate the child and deliver. We managed to remove one arm and part of the other, but the most persistent efforts on our part failed to disengage the head or feet, and as she was in a small house with no competent nurse to attend her, we did not feel justified in incising the cervix or in doing anything else that would damage the soft parts and subject the woman to the dangers of sepsis. In this dilemma we were at a loss to know what to do, but decided to carry her to the Highsmith Hospital, at Fayetteville. It was now between 2 and 3 o'clock p. m., and the distance to go was 16 or 17 miles. We hastily put

her into an automobile, and started to the hospital, arriving there about 4 or 5 p. m.

Dr. Highsmith was out of town when we arrived, but Dr. Pittman, his assistant, took charge of the case and, as soon as she could be cleaned up, attempted version but, like us, failed, and decided that the safest thing was Cæsarean section. He forthwith proceeded to open the abdomen and deliver the child. The contractions of the uterus were so strong that hemorrhage was slight and easily controlled. Dr. Highsmith returned about the time he began closing the uterine wound with catgut and assisted him in finishing the operation. The woman recovered without any complications, left the hospital at the end of three weeks, the wound was completely healed at the end of four weeks, and she was discharged by me a few days later as fully well.

Could we have had help early in the morning of the 19th, and proper surroundings and a competent nurse to perform this operation, I feel sure both mother and child could have been saved. The conclusion, therefore, is that it is infinitely better to perform a Cæsarean section in any case of difficult labor where we have to resort to extreme measures than to subject the woman to the dangers of sepsis which usually follow the traumatism and examinations of the physician in attempts at other methods of delivery.

DISCUSSION.

Dr. J. T. Burrus, High Point: I feel that just enough members of this Society are left to really bring the Society down to a good meeting, because you get men who are interested in the subjects discussed. I feel that this is an important subject, and one that should not pass undiscussed. Now, those of us in the South, far away from the larger medical centers of the country, look upon Cæsarean section as being a spectacular thing, and one that should be approached with a great deal of consideration and care. I want to say that in Dr. Averitt's case the good Lord was evidently with him. Every opportunity to die had been presented to this woman. The great mortality in Cæsarean section is where you have endeavored to apply forceps or where you have endeavored to do a version, and not succeeding, you have had to resort to Cæsarean section. Dr. Devis, of New York, advises and teaches that in every case where you have to apply a high forceps it is far better to do a Cæsarean section than to resort to a high forceps delivery. After seeing a great many cases of Cæsarean section and after doing a goodly number of Cæsarean sections, I believe that Dr. Devis, in principle, is correct. I believe that today we have wives and mothers who are made invalids by careless obstetricians, men who are really able to do better

obstetrical work than they do. In a case where we have full control and where we have opportunity before the delivery approaches, we should resort to our pelvimeter and find out just what the dimensions of the pelvis are. This will many times steer us from the danger mark and save the lives of many children and the health of many mothers. I cannot conceive why it should be more dangerous, with the proper surroundings, with the proper precautions, with the proper coterie of assistants, to antiseptically open the abdomen and deliver the child; I cannot see why this should be nearly so dangerous as to put a great big forceps through a rigid cervix. I recall today a number of cases of separated symphysis which have occurred as a result of too much pressure against the symphysis. The old doctrine of using all your force to deliver a child is wrong. Many times we fear hemorrhage, but there is absolutely no reason why we should. You are right there by the round ligaments, you have the arteries under your hand. You can compress them for a few moments, then use your uterine sutures, and prevent the hemorrhage that usually occurs, or is supposed to occur, in doing Cæsarean section.

Dr. T. Marshall West, Fayetteville: I want to endorse what the last speaker has said, especially in regard to the application of high forceps. I have had the privilege of attending a pretty large obstetrical clinic in Baltimore. The mortality from Cæsarean section was very low, and the principal mortality was from eclampsia *per se*. Quite a number of operations were done to effect a delivery when eclamptic symptoms had developed before term. Where you have a rigid cervix, which takes a long time to dilate, and the patient is in convulsions it seems to me that the best thing to do is to deliver the child by the quickest possible method. With proper precautions, even in a home, it can be done, and done, I contend, a great deal more safely than by applying high forceps. I believe the prejudice against Cæsarean section arises from the fact that it seems to many practitioners a tremendous operation, when it really is one of the simplest abdominal operations that can be performed. I cannot see how we can condemn the Cæsarean section under the proper precautions and in proper surroundings.

PRESENT MEDICAL STANDARDS.

H. D. Stewart, M.D., Monroe, N. C.

Quite recently in several cities a number of the smaller medical colleges have merged into larger, stronger ones, with higher standards. Some few have advanced to the six-year course, with the A.B. requirement. This is a step in the right direction. I wish briefly to argue this question pro and con.

The six-year course is too long, too expensive, and will discourage many a worthy young man. The A.B. requirement is probably all right. When a man gets an A.B. degree at a first-class, high grade literary college it takes him four years. He is about eighteen years old when he gets through the graded school or the high school; twenty-two when he gets through the literary college; twenty-eight when he finishes at the advanced medical college; thirty when he finishes his hospital course; and by the time he builds up a practice he is thirty-five years old.

I claim that a man ought to marry before he is thirty-five, because, if he does not marry before he is thirty-five and then happens to die of something other than old age, the chances are he will leave a widow and several children for the world to impose upon.

The best specimens of the human being are born of fathers from twenty-five to thirty-five years of age, with mothers from twenty to thirty.

The six-year course seems to be an extreme requirement. A man who is able to get the A.B. degree will not need six years to take the medical course. He can do the work in three years, if he has the A.B. degrees to start with. Learning medicine is child's play, compared with working out Greek, Latin, and higher mathematics.

This advance in the medical curricula is due partly to the commercial spirit in the faculties and trustees of the medical colleges involved; and it is due in part to an honest desire on their part to advance medical education and the medical profession. But I think they are carrying it rather to extremes. A more conservative advance would work much better for the profession, as well as for the city. What effect will this have? A poor boy can not go through a first-class medical college at all. Those with plenty of money can go. When they go up to take the six-years course the A.B. degree men know they can do the work in less time. Consequently they will waste three years seeing the sights of a great city, when they ought to be at work.

Even under the four-year course a bright man will waste about two

years. How precious are these wasted years when he shall have reached forty and looks back over his past life.

The advanced course will drive all the uneducated fellows who are in a hurry for a degree and a license, to the low-grade, shorter course medical colleges. This will encourage the increase of enterprising low-grade colleges organized for commercial purposes. We need advances in medical learning, and at the same time a check to commercialism as practiced by low-grade medical colleges.

Neglected phases of the public health work.

Teaching fathers and mothers the cause of abnormalities and of mental and physical defects in children; teaching mothers and fathers how to beget, germinate and gestate a normal child; teaching the people the classes of foods and which kind is suitable to one occupation or another; teaching the prevention of disease; informing the mothers, fathers, daughters and sons as to remedial diseases; teaching girls and boys the mysteries of life; showing people what a bad marriage is and the results of bad marriages.

The Basic Cause of Disease: A Brief.

What causes a man to grow old? Hardening of the ductless glands and of the arteries. A man is as old as his arteries and his liver. The gastrointestinal tract is a veritable culture tube for bacteria. When the normal secretions are disturbed in their antipathic effects the food we eat becomes a culture medium. Especially do proteids and sweets furnish a culture medium. Animal nitrogenous foods, when they are not properly and sufficiently acted upon by the normal secretions, putrefy in the intestinal tract.

Starches, saccharoses and glucoses, when they are not disposed of by normal, healthy secretions performing their natural functions, ferment and increase the bacteria of the intestine. Amino acids, toxic ptomaines and uric acid are increased.

These, when taken into the blood, attack some weak spot or some weak organ of the lower resisting power and irritate the cells of that spot until a disease is set up.

Except the infectious diseases, all other diseases come from this common cause. And even the organ that takes an infection or a germ disease is predisposed thereto by the effects of these toxins or acids disturbing its function and lessening its resisting power.

All diseases except those due directly to the entrance and the action of germs is autogenetic and depends upon disturbed metabolism or the failure of normal secretion and excretion. When the liver, the great filter, fails, all is lost.

Its companion, the pancreas, usually fails through sympathy or because the two organs are interdependent.

Every individual has his weak spot or his organ of greatest vulnerability and least resisting power.

Autointoxication or acidæmia is the cause of cancer, arteriosclerosis, Bright's disease, cirrhosis of the liver and of the lungs, of most skin troubles, of some cases of insanity, of paralysis, of heart fag and heart failure, of congestion of the brain, of the lungs and of various other organs.

We must keep the opsonin index up to a certain point or the bacteria will gain the mastery. Phagocytosis will fail. Pathological progress will exceed physiological progress.

Just as English, Latin and mathematics are the foundation of a literary education, so are chemistry, physiology, and anatomy the fundamentals of medicine and surgery. All the balance is polish and finish and can easily be taken on when one is well grounded in these fundamentals. We do not know enough about the physiology and the chemistry of the body, its organs, its secretions and its excretions. We do not know enough about the chemistry of foods nor about the changes that the process of cooking produces in foods. If we did it would be so much easier for us to prevent and to cure disease.

The blood is normally alkaline. Anything tending to preserve its normal alkalinity protects against disease. Anything ingested or any external influence which lessens the alkalinity of the blood predisposes to disease.

Acidæmia predisposes to disease. The blood is rendered less alkaline and more acid by the meat diet, by proteids, nitrogens, by alcoholism, by cold, by exhaustion, by fatigue, by worry and trouble, by overwork of brain or of body, by loss of sleep, by sexual excess, by excessive heat, by starvation or insufficient nutrition, by insufficient elimination by the liver, kidneys, bowels, skin and lungs, and by excess or insufficiency of the normal secretions.

Vegetables and fruits help to maintain the natural alkalinity of the blood. So does rest. Foods that rot or readily spoil in the air will do so in the stomach and bowels, if not perfectly disposed of by an extraordinary functional activity. Foods that keep well in the air will be better for the body. Meats soon decay. Vegetables keep longer.

Free perspiration increases the alkalinity of the blood, eliminates excessive acids and in this way protects health. Too much salt or sodium chloride increases acidæmia and favors the development of disease.

Increased oxygenation or abundant intake of pure air increases the alkalinity of the blood and preserves health.

Vegetarians do not have cancer. Vegetarians die of old age.

Thomas Edison takes comparatively little food. He can work three days and nights on bread and water. He works his brain instead of his stomach and liver.

Having too many children predisposes a woman to disease. She wears out prematurely.

In treating disease, medically or surgically, we must maintain the opsonic index. Old age is but a lowering of the opsonic index—a failure of glandular functions, of secretions, of normal elimination, a loss of the power of muscular contraction and expansion, a loss of nerve force and of nerve tone.

To me this subject is extremely interesting. We must know physiology before we can know when physiology becomes pathology—when health insidiously and unconsciously merges into disease, and why and how and the cause.

DISCUSSION.

Dr. J. T. Burrus, High Point: I am delighted to see in North Carolina a people who regulate their own high schools and their own colleges and universities. We are content with the classical education received in the colleges and University of North Carolina. In the legal world a North Carolina lawyer is considered as good a lawyer as you will find anywhere; the North Carolina business man is as good as you will find anywhere. I, as a member of the medical profession of North Carolina, the greatest profession known, am opposed to going into a combined Northern trust and being dictated to by Flexner, of New York, who knows nothing about the requirements here. I believe we, as doctors, should have an institution in the State of North Carolina that can qualify its men to make doctors equal to the demands that exist in North Carolina. That is the reason I have always been delighted with and favor our most excellent institution at Charlotte, and I have no patience with the man who condemns it. If we have not what we ought to have, then let us get what we ought to have.

Again, I believe that when you raise the medical requirements to six years and call for an A.B. degree before a man can approach the study of medicine, you have sapped that man of the enthusiasm necessary to success in any line. He has given his enthusiasm to the college walls, living so long under direct supervision that when he gets out he is like some army and navy officers—he is tired and never gets rested, he is always resting. I have seen mistaken diagnoses made by men who

have had the greatest advantages and opportunities. There is danger of the pendulum swinging too far. I don't want it to be understood that I am opposed to the advancement of the medical profession in North Carolina. I invite it, but I think there is danger of going too far. I believe many boys and girls are ruined because their health was wrecked in getting an education.

Dr. G. T. Sikes, Grissom: I remember the time I served as Secretary of the Board of Medical Examiners, about the time this idea of extending the limit for medical education was being discussed in the United States, and I had quite a number of letters from various colleges asking what I thought. I invariably took the ground that if a young man has the grit in him it does not make any difference whether he is required to go to college six years, three years or four years, but this thing comes up as the solution of the matter. If the young man can enter college and pass his examinations and come back home and stand before the examining board of his State, the attainments to obtain his diploma and the attainments necessary to pass his board will qualify him to do sometimes very much better work than the son of a wealthy man, who has to go to college six years to get his A.B. and then has to go to the medical college four or six years to acquire his M.D. God in His wisdom has so constructed the mental capacity of human beings that some can and will graduate in four years, some in six years, and some in forty. The man with the grit and ability to arrive at the point that is necessary to make him a man will be the one to get there, and my idea is to allow every man with a reasonably fair education who feels capable of undertaking this great work—allow him to undertake it, and in the end he who is qualified will succeed and he who is not will fail. We are not compelled to resort to the Northern colleges for six years, but we can get our education right here in North Carolina.

Dr. Lewis W. Elias, Biltmore: I want to say a word to defend the longer course in medicine. There is no such movement in North Carolina and we don't have to consider it seriously. But if a Northern State wishes to take that course let us not blame them, let them work it out and we will profit by their experience. If more knowledge will help, don't let's say that we are satisfied with North Carolina's present condition. If there is any advance to be made, let us get the most of it, no matter what the course is. This move is not made by a Northern corporation, as suggested. It is advocated by men interested in the advancement of medical science. Simply because some of the big men who have taken advanced courses have made mistakes as repeated by the

doctor, there is no reason to say that there is nothing to be gained by further study and work. All of us feel in difficult cases as if we would give anything under the sun for more knowledge, and we are not going to improve ourselves or our State by denying this universal need.

Dr. M. M. Saliba, Wilson: An ignorant man, in my opinion, is the man who does not know that he does not know. In other words, the more we learn and the more we study, the more we realize that we do not know, and any man who will say that one, two, three, six or more years is enough to study, in my opinion, has not reached the goal. We have to study, we are studying now as practitioners, every minute and every day. So if certain colleges want a course of six years or more, it is up to them to have it. If a man wants those advantages, let him have them. We should not condemn the elevation of the standard of medical education, but rather encourage and help it.

OUR PROFESSION.

J. T. Burrus, M.D., High Point, N. C.

Medical men who meet in the forum of medical societies and engage in scientific discussions and interchange of clinical experience are thereby better equipped for the discharge of the grave and responsible duties of their high calling. Under our republican form of government, free press, freedom of speech and act in religion, the legal profession by their association in legislative bodies and in litigations have presumed the masses of the people to become acquainted with the fundamentals of all laws and professions, knowledge of the medical profession until recent years being confined almost exclusively to its own members.

The field of scientific knowledge of the medical profession lies far out beyond the acquaintance of the great masses of the people, even of the most advanced civilization. And herein lies one of the greatest hindrances we have to encounter in our efforts toward the betterment of the general health conditions among the people.

The mutual relation of the profession and the masses brings a mutual obligation and there is an evergrowing demand for a better understanding between them. The medical profession exists not for its own sake, but for the common good of the people. The sufferings and needs of humanity call it into existence. The relation, therefore, between the medical profession and the public is a very important one,—there are so many things that should and must be explained to the masses by

the profession before it can do its greatest amount of good. Like all worthy professions, that of medicine has its peculiar code of ethics, and the reputable physician who is worthy of public confidence and patronage bases his career as a clinician upon what the profession believes to be a moral obligation to humanity, which it seeks to serve. The doctor in no small way is a public man, and therefore a public servant. As guardians of the health and lives of the people it is but just that the profession stand for everything that is right and uplifting to the community. I believe that an intelligent public does know that the true profession stands for the highest ideals of life, and the truest moral standard among the people.

The ethical demands of the public upon our profession are fully justified. The close vital contact of the physician with the deepest and most sacred relation of life, a contact of which he is the master in charge, lays upon him the greatest moral obligation to the welfare of the race at large. To him is committed the most sacred secrets of private life, both of the individual and the home. Indeed his close and vital contact with the masses in the greatest facts of life render him an important factor in the common welfare of our civilization. The humbug and the quack are very much in evidence everywhere, and the serious fact is they are nowhere so well protected and so well enabled to do their mischievous work as they are under the cover of a profession that legitimately assumes to care for the health and welfare of the people. Here, because of the lack of correct information and the helplessness of the masses, is found the paradise of the quack, feeding like a vampire upon the lives of the suffering and afflicted.

We must in all serious honesty guard with jealous care the sacred responsibility committed to our hands and by continued search into the realm of sacred truth and by a constant dissemination of scientific principles, drive the false pretender and quack, the parasitic fads of the day, from the field and deliver suffering humanity from their ravages.

The profession has been subject to all kinds of indignities by the charlatan and patent medicine pretenders. These vampires that have sucked the blood of suffering humanity have grown arrogant and assumed for themselves all the virtues and wisdom of the age. Too often they arouse the passions of the ignorant and blind them to their real condition of health, and lead them away from their only hope of recovery. However pious may be their pretensions they are but murderers of confiding and helpless people and the government should have the moral courage not to afford them the protection of the law. The people who encourage them commit a crime against the race.

The people who would enter the profession of medicine need to be impressed more fully with the importance and sacredness of the profession that enters so vitally into the common health and welfare of the country. Furthermore, the public should learn that none but the high grade, moral, well educated, with the highest ideals, enter into the profession of medicine. There is a righteous demand for wise and rigid legislation throughout the nation, and we should secure legislation making the examinations more rigid than they are now.

There should be uniformity of action among all the States. The higher the standard and the more rigid the demands made by the laws of the country, the better the protection of the people, and the worthier will be the men who shall constitute the profession. No practitioner worthy of the privilege of a standing in the profession will join the calamity howl from the ranks of the false pretenders who extract their money at the price of blood when such necessary, such sadly needed, and such long delayed legislation is attempted. The protection of the profession by legislation is even a greater protection to the people. I venture to assume that in a very few years the people will demand such legislation as will permit none but the honest, moral, and well equipped doctors to practice the healing art. And in case of immorality and dishonorable conduct they will demand the legislation that will disqualify the offender and revoke the license that gave him recognition in the profession.

There is no creature with any pretensions of respectability so low in the estimation of any honorable and honest man as the man who traffics in the ills and affections of a fellow man, or who withholds any remedy or agent (from the world) that might alleviate suffering humanity or save human life.

Under the advancement of enlightenment of the masses in matters of medical science in the future this long tolerated abuse—quackery, will disappear, as the cruel customs of society are disappearing before the advancement of the high civilization and enlightenment of today. There is advancement all along the line, but there remains much to be accomplished in bringing about the full coöperation and confidence that must exist between the profession and the people.

Too often it is the case that the very ones most sadly imposed upon join hands with the quack and help him fight against the advancement that true medical science is striving to accomplish for the people.

No profession has made such rapid progress within the last century as that of medicine. We are not discouraged when we find that it has been a constant battle in every country and in every age.

The advancing light of truth dispels the darkness.

> "Truth, on which depends our main concern,
> That 'tis our shame and misery not to learn,
> Shine by the side of every path we tread
> With such a lustre he who runs may read."

When we come to the fullgrown day of scientific knowledge and the public more fully understands the science of medicine and the healing art, and superstition is buried in oblivion, then will the quack and the fake and the numerous fads which infest the land with their hurtful influence, take their flight. Then reason and common sense will reign supreme. With the dawning of the day of true scientific knowledge and the application of real scientific methods there comes a charming story of progress, as step by step the ladder is climbed and medical science reaches the heights of the present day achievements as long sought for its many victories.

Standing as we do today in the dawn of a new century and the most advanced light in the scientific world that humanity has ever enjoyed, one fact is evident: the century marks a growing disposition on the part of the medical world to prevent rather than to cure. The biologist and the other laboratory workers are pointing out the causes and modes of transmission of disease and the medical profession is to look to the prevention of these causes. This phase of our work is bringing the physicians more and more in contact with each other and thus is becoming a coöperative condition.

A higher standard of enlightenment of the masses must result from it. The rise of the germ theory, which began with the researches of Haller and others and which theory has been demonstrated to the fullest satisfaction of the most exacting skeptics, has marked an epoch in the knowledge and treatment of disease. To Pasteur's demonstration in fermentation and putrification our present knowledge of germs is based; to immortal Jenner we owe the prevention of smallpox by vaccination; to Lord Lister antiseptic surgery; to von Behring antitoxin for diphtheria, which alone has saved countless numbers of lives. From him the serum theory sprung, which has contributed largely to the amelioration of diseases and the preservation of lives. The genius of Nott and Walter Reed solved the problem of yellow fever, which scourge cost our Southern States countless lives. The bubonic plague, which in the Middle Ages would have swept all before it, is tamed and beautifully held in check by knowledge of its cause of transmission. The great white plague, while yet unconquered, has lost much of its terror since it is now well known that sixty to seventy per cent can be cured if the

cases are taken in the early stages of the disease. The handling of typhoid fever is much easier since we know better how to prevent it. This is true of all fevers. For these we are thankful, and to those who have so abundantly contributed to the unveiling of these truths, we humbly pay our most sacred reverence.

While we understand the nature of tuberculosis in a small way, the disease is yet unconquered. Measles and whooping cough are thorns in the scientific world which rage unchecked, reaping a large harvest each year. Cancer—oh! my God, how shall we ever conquer it? We must! Gonorrhea and syphilis are going hand in hand seeking whom they may devour. There are problems regarding the internal secretions which will furnish food for our most brilliant minds. We haven't explored it all, and there remains much to conquer in the fields where our greatest explorations are to be made. We are now just ready to achieve our greatest victories. The great field lies out before us almost as yet unexplored. We have but to see it and learn its boundaries from afar. Let us, therefore, move forward, with each effort to better our profession and give to suffering humanity in some way something real, living lives worthy of emulation.

Thyroidectin and its Employment in the Treatment of Exophthalmic Goitre—Dr. J. J. Philips, Tarboro.

Read by title.

DISEASES OF THE GALL BLADDER AND THEIR SURGICAL TREATMENT.

J. F. Highsmith, M.D., Fayetteville, N. C.

In reviewing the mortality of operations for gallstones by the various operators, one is impressed with the very fortunate outcome where the gallstones were in the gallbladder and before there were any complications.

Mayo places the mortality in simple gallstone disease at less than one-half of one per cent, in operations for common duct stones ten per cent, and where malignant disease has developed the mortality following operation is of course much higher. With such statistics before us it must at once bring up the vital question, Can the diagnosis of gallstone disease be made while the conditions are favorable, mortality low and cure almost certain? As a rule I think you all will admit that it can. There are of course some exceptional cases which can not be accurately diagnosed before operation, but these can be reduced to the minimum. Even

a superficial inquiry into the common duct series will demonstrate the fact that in the majority of these cases the diagnosis should have been arrived at in the early stages and a safe operation performed during the initial period, without having to wait from time to time and the danger from operation becoming more serious.

The differentiation of the surgical from the medical cases is uncertain and often impossible. Perhaps the greatest obstacle to be overcome is the false knowledge and prejudice handed down to us by a literature founded upon theory and misconception, but once clear the atmosphere of this, fog passes away and the diagnosis becomes easy. Like every other thing when seen it is so simple that we wonder why some one has not explained it before. One can almost mourn for our old favorites, "bilious (hepatic) fevers, gastralgia, stomach cramps" and a host of other similar delusions based upon the feeling of the patient, still the true secret lies buried in the term gallstones.

Various diseases with which gallstones may be confounded are gastric ulcer, rarely carcinoma, duodenal ulcer, appendicitis in its various forms, diseases of the right kidney, especially calculus or that intermittent kinking of the ureter or of the vessels of the kidney which causes Dittel's crisis; lead colic; affections of the right pleura or lungs, the gastric crisis of locomotor ataxia. But there are a few anatomical facts which will help us to explain many of the symptoms of gallstone disease. The gallbladder is an offshoot of the biliary apparatus, is about three inches in length and holds one and one-half ounces of bile. The base of the gallbladder is slightly dilated and forms a little pouch by the reduplication of the mucous membrane and lies obliquely with it fundus directly downward, forward and to the right, and touches the anterior abdominal wall at the junction of the outer border of the rectus and costal cartilage. This point corresponds almost exactly to the tip of the ninth rib. The cystic duct does not leave the lower part but at a point on the inner wall slightly elevated above the neck and about one inch in length and ranges downward. The cystic and hepatic ducts form the common bile duct. The common bile duct is slightly more than three inches in length and extends from the point of its foundation at the junction of the cystic and hepatic ducts downward and slightly to the right and ends with the canal of Wirsung in the ampulla of Vater. The blood supply of the gallbladder is from the cystic duct, being above and slightly to the inner side. In cutting across close to the common duct there are small branches of the hepatic which may be wounded. A large vein occasionally crosses the common duct and when injured is supposed to be the portal vein.

The nerve supply is very interesting. Lannander has shown that the abdominal viscera has no sensation, but the parietal peritoneum was very sensitive. There is one exception to this rule: Jonas has pointed out two branches which pass from the four lower dorsal and two upper lumbar nerves along the diaphragm. The terminal filaments pass to the common and cystic duct and the neck of the gallbladder, thus accounting for the deep median line pain of the colic and attending spasm of the diaphram. From the days of Galen up to comparatively recent times the belief was universal that gallstones were the result of coagulation of the bile induced by the increase of heat in the liver. It is now the general consensus of opinion that gallstones are the result of cholecystitis.

Much attention has been given to the influence of bacteria in formation of gallstones, the bacteria probably reaching the gallbladder from the bile current rather than by an ascending affection from the duodenum by way of the common duct.

It has been shown by Moyneham, Mayo, Ochsner and others that the majority of people subject to gallstones have had mild attacks of cholecystitis at various times before the formation of stones. The symptoms which lead most constantly to a correct diagnosis when gallstones are present are not jaundice, passing of the stones with the feces, colic, etc. But, first, digestive disturbance, a feeling of weight, a burning in the stomach after eating, and an accumulation of gas in the abdomen; coated tongue. Second, dull pain extending to the right from the epigastric region and progressing upward under the right shoulder blade. Third, a point of tenderness upon pressure between the ninth costal cartilage on the right side and the umbilicus. Fourth, in many cases there is a slight yellow tinge in the skin of the sufferer not sufficient to be recognized as icterus, but still sufficient to be recognized upon close inspection, especially on the day on which the patient is not feeling very well; when he or she complains of being bilious. Fifth, there is usually an increase in the area of the liver dullness. There may be a swelling of various size opposite the end of the ninth rib. Of course when we have added to these symptoms biliary colic, vomiting, followed by jaundice, and possibly the passing of biliary calculi, our diagnosis is still further confirmed. But then, without these three last conditions we must make a diagnosis ordinarily or we will miss it in most patients suffering from gallstones.

It is a rule which has been confirmed by operators of experience that the long suffering of years which has been treated as indigestion without relief referring to the stomach and not the liver, but with the epi-

gastric pain, nausea and vomiting, neuralgia of the stomach, colic, spasms, etc., at operation have been shown to be cases of gallstones. The disturbance which is likely to be caused by the presence of gallstones may be chronic in character, taking the form of digestive disturbance, giving rise to almost constant discomfort, especially after eating. This condition is probably due to interference of the passage of the food into the duodenum. As long as the gallstones remain in the gallbladder without causing any complication, the harm is relatively slight. The comfort of the patient will be greatly disturbed on account of the disturbance of digestion. But in the active cases with which we are apt to come in contact in our respective practice, the diagnosis is generally based on the colic. The patient is seized with severe pain in the median line, just beneath the ensiform cartilage and usually radiates to the right, occasionally to the left, and may pass to the back or up through the sternum. This typical colic may last from a few minutes to a few hours, is relieved by nausea and vomiting, or a feeling of a movement of gas in the bowels unless cut short by anodynes. There is in this class of cases but little quickening of the pulse or elevation of temperature. The patient is relieved, feels good, eats well and digests well beyond a little rigidity in the right rectus muscle, and has no physical evidence of the disease. The most confusing cases are those in which the appendix masses the condition and we have a case of appendicitis to deal with. In this way we have pyloric spasms and indeed I have operated many times where the symptoms were pointing to gallstones and upon operation found the gallbladder to be empty and the appendix responsible for the condition. Renal colic can be differentiated from gallstones by pain passing into the loin; and is most intense behind and radiating downward into the testicle with a history of some urinary disturbance, the tenderness usually being greatest just below the twelfth rib behind.

The second stage of gallstone disease, where the patient has not consented to operation and the condition allowed to advance, means an obstruction at the pelvis of the gallbladder. The attack may begin as typical colic, but instead of passing off quickly is replaced by tenderness in this region. The pulse quickens a few beats, temperature rises to 102 or more and then the distended gallbladder may become contracted with slow absorption of the fluids. This is first attended by a localized peritonitis around the gallbladder and now for the first time in the disease we have a slight receding jaundice due to the influence of the common duct and its drainage from the plastic peritoneal deposit. The case is now a typical one of chronic stomach trouble, dyspepsia, etc. There may be recurring attacks of regional peritonitis but no more

distinct colic. Adhesions to the pylorus may interfere with the gastric motility, resulting in dilatation of the stomach, general discomfort, etc.; or the stones may pass into the cystic duct and give rise to fever, temperature 104; chills lasting for a few hours, recurring at irregular intervals. The pain is now boring and deep seated and may last for a number of days constantly as the stone passes. There is often temporary jaundice. The stone passes into the common duct and as a rule the temperature assumes the characteristic malarial curve, chilly sensation with sudden rise in temperature, lasting for a few hours and perhaps running as high as 107. Jaundice during the acute stage is present in a varying degree and with each exacerbation there is a slight increase in the icterus. In about one-fourth of the cases there is a quiescence which may last weeks or months and the only symptoms complained of being gastric disturbance, with some loss in weight. The interval is a safe time to operate and the death rate at this period is about two per cent. Sooner or later changes develop on the walls of the common and hepatic ducts and infection becomes more active. Jaundice increases and there is more loss of flesh and progressive anemia. The safe time for operation has passed and now the mortality is from ten to thirty per cent. As a rule in all duct cases, both cystic and common, there is unconscious resistance to deep pressure over the upper right rectus muscle during inspiration. Jaundice when present has no part in the diagnosis of the gallbladder stones, but many times the complication arises in one of several different ways. First, stones in the bladder may give rise to cholecystitis, infection travels to the common duct and produces cholangitis with jaundice; second, a localized peritonitis is established and a plastic deposit in the fissure of the liver compresses the common duct and causes jaundice; third, a stone impacted in the cystic duct may compress the common duct; fourth, cholangitis infection may extend into the pancreatic duct, causing chronic pancreatitis and jaundice.

Jaundice from malignant disease has usually the early history of gallstones and there is apt to have been a prolonged period of quiescence. Cirrhosis of the liver may produce jaundice, but the alcoholic history and enlarged spleen and ascites so often present permits differentiation. Catarrhal jaundice, so often seen in young people, especially in malarial sections, has nothing in examination to suggest biliary calculus. The urine should be carefully examined, although there is nothing characteristic about it beyond the presence of bile. Finally there are a few patients who come to us with severe symptoms of the upper abdomen, so serious in nature that if they had been located in the pelvis or the ap-

pendiceal region, operative interference would have been instituted at a much earlier period. Here we may not be able to make a pathological diagnosis but we can make a surgical one, that is, we can demonstrate beyond question that the cause of the symptoms is one of several conditions, all of which are surgical. Such being the case, operation should be instituted before gross pathological changes make the differential diagnosis more certain, but unfortunately the prognosis less favorable. It is a question to be decided on its merits and the patient should be allowed the choice in the doubtful case. I would not advise a reckless resort to the knife for exploratory purposes. We should avail ourselves of all the diagnostic information obtainable from the laboratory and physical examination and beyond all from the history of the patient, but it is a false conservation which stands in the way of early operative interference of gallstone disease.

DISCUSSION.

Dr. H. D. Stewart, Monroe: Gallstones seem to be about three times as common in women as in men, and more common in brunettes than in blondes, and much more common in stout women than in lean women. Gallstones, I have found, are often confused with cancer of the stomach. Gallstones are correlated to the rheumatic diathesis, the uric acid diathesis, to full, thick blood current, to lessened alkalinity and increased acidity of the blood. Gallstones have a causal relation to the proteid, nitrogenous thief and to sedentary habits. Strict vegetarians rarely ever have gallstones. The active outdoor liver seldom has gallstones. They usually belong to the two decades from forty to sixty.

Dr. J. W. Long, Greensboro: Dr. Highsmith has covered the subject so well that very little can be added to what he has said. I know something of Dr. Highsmith's work and the excellency of it, and I rise more to congratulate him than anything else.

There are just two or three points I wish to notice. First, if he mentioned the boras sign I did not catch it. This sign is a point of tenderness on the back, about the tenth or eleventh rib and three or four inches to the right of the spine. I think it may be said with all confidence that whenever we have tenderness well marked at this point we can safely say there is a cholecystitis present. I do not remember to ever have known this sign to fail.

Touching the cause of gallstones, I agree quite heartily with Dr. Highsmith regarding the etiological relation of cholecystitis, but while that is true as a rule, we must remember that there are other causes of

gallstones. For instance, I have removed a gallstone from the left lobe of the liver, where it would be mechanically impossible to get from the gallbladder. I have removed gallstones from the various branches of the hepatic ducts long years after the gallbladder had been destroyed by inflammation. Those of you who have read Moyniham's book on gallstones will recall that he has a full page illustration of a liver cut open, in which all the ducts, even to the small ramifications of the hepatic ducts, are filled with gallstones. While the cause mentioned by Dr. Highsmith is the rule, yet there are some occasional exceptions.

I agree with Dr. Highsmith as to the value of drainage. I believe that the drainage is quite as essential in the curing of the patient as the removal of the gallstones. I hoped that he would go a little further and discuss the question of whether he removes the gallbladder or simply drains it. That is a point which has been debated a great deal, and I will simply add that in the large majority of cases I believe it is better to drain the gallbladder than to remove it. I believe as a general rule that is the best and safest thing to do.

Dr. M. H. Fletcher, Asheville: Dr. Long brought out a point in which I am very much interested. In my limited experience three of my cases of gallstones or gallbladder disease, my patients had just about as much trouble after an operation as they had before. These were cases in which gallstones continued to be manufactured in the liver. Gallstone surgery is pretty simple, but we must take into consideration the number of cases in which we continue to have trouble. I do not think it makes much difference whether or not you take out the gallbladder. It adds a great deal more time to the operation.

The doctor is right as to the necessity of drainage. The only case I lost from gallbladder disease was one in which there was not proper drainage. I do not suppose any one would operate now without draining, not only inside the gallbladder, but outside as well.

Dr. Henry Norris, Rutherfordton: There are one or two points I should like to make about the diagnosis. I think it is very characteristic of gallbladder disease that you invariably have a slow pulse, except during the colic attack. Another observation I think you will bear out is that gallstone disease is very uncommon in true blondes. You may have stones in the duct or there may be a cholecystitis, but you do not see the everyday gallstones in the true blonde.

I do not propose to talk about the technic, but I think one of the most valuable points I ever got in surgery of the gallbladder was in rotating the liver, which simplifies the operation on the ducts. Any man who has seen it done will put it into practice if possible.

Dr. Highsmith, closing discussion: I have heard it stated that gallstones may be due to bad teeth. Patients with gallstones generally have bad teeth. Then we also know that those fat and forty are more likely to have them. The theory of just how gallstones form in the liver ducts or away from the gallbladder will have to be fought out in the future. As to removing the gallbladder, I never remove the gallbladder unless disease has already removed it, or the appearance is that it will go into some malignant condition. I leave it for drainage.

ACUTE OBSTRUCTION OF THE INTESTINES, DUE TO GALLSTONE: REPORT OF A CASE.

R. L. Gibbon, M.D., Charlotte, N. C.

Among the causes of intestinal obstruction listed in the textbooks, such as bands and adhesions, hernia, intussusception, volvulus, Mechel's diverticulum, etc., obstruction due to gallstones is also mentioned, although such is the undeniable rarity of its occurrence that many men of large experience go through a long professional career without having seen a case. Because of its relative infrequency, as well as from the interest which is naturally felt in cases of this character, the great majority of instances in which it is recognized, and especially where the diagnosis is confirmed or the condition discovered at time of operation (for it cannot be denied that most cases have escaped definite diagnosis beforehand), are matters of record. Hence it follows that the literature of this subject is fairly comprehensive. A casual examination of such of this literature as is accessible to the writer shows many careful and painstaking reviews of the history, nature, symptoms and treatment of gallstone obstruction by those best qualified to do so, and removes any excuse for attempting here what has already been so well done before.

I shall therefore confine myself to a report of my own case, with a brief discussion of some of the more interesting features, referring those who may care for a more thorough investigation to a partial list of the numerous articles upon the subject appended to this report.

On April 2, 1913, I was asked to see Mrs. W——, who for four days had been persistently vomiting large quantities of greenish colored fluid. All attempts to move the bowels during this period had failed, although six days before, as a result of a purgative, there had been five or six free movements. The obstruction therefore was acute.

The following history of the patient, prior to the time at which I saw her, was given by her physician, Dr. O. B. Ross, of Charlotte, N. C.

White, female, married, age 60. Family history: Father died of old age; mother died of erysipelas at 45; there were four brothers, two of whom were killed in war and one died suddenly; three sisters, one dead from unknown cause. Personal history: Had measles at 12; no scarlet fever or diphtheria; had typhoid fever at 22 and was in bed for four weeks from this cause.

Subject to attacks of swollen, tender feet, first, ten years ago; second, eight years ago; third, two years ago; fourth, seven months ago. All attacks have shown redness except the last, when there was tenderness and œdema. These attacks have been pronounced gout by medical attendants.

Renal colic: The first attack occurred eight years ago when one stone was passed; the second attack was seven years ago, when another stone was passed. Both are smooth, and look very much like uric acid stone. These were the only attacks.

Obstetrical history: Para 8; the first six are alive and well; the seventh died at twenty-one months with meningitis; the eighth died at three months with meningitis.

Present illness began March 29, 1913. Slight stomach disturbance early in the morning; about 11 a. m. the right side began to pain. The patient states that the pain was of the same character as in attacks of renal colic, and she thought it was renal colic. At 1:30 p. m. a hypodermic of morphine was given, which relieved the pain; about 5 p. m. vomited large amount of greenish vomitus. She took a purgative the night before and bowels had moved six or eight times the day before; vomited three times during the day. The liver was not enlarged. There was slight tenderness over the twelfth rib anteriorly. There was no tenderness over the gallbladder region and no fluid in the abdominal cavity. The heart sounds were fair but rather distant while lying. Temperature 99.6, pulse 82, vomitus eight to fifteen ounces and very green.

March 30, 1913. Urinalysis: Color, light amber. Sp. gr. 1020. Trace of albumin, no sugar, trace of pus, few casts, uric acid crystals, no blood.

March 31, 1913. Leucocytes, 9,400. The temperature did not go over 99 degrees during the day. Large amounts of very green fluid were vomited at intervals of from three to five hours. The pain in the abdomen was general, diffuse, and nagging. No pain in the right side like kidney pain. Has had umbilical hernia of large size for thirty years, which was not bad at first but has grown worse. On one occasion she had sudden pain in the region of the hernia, vomiting, and cold sweat. This soon passed off on lying down. The opening was about 1.5 inches and circular. The hernia consists of omentum. There was tympany above the umbilicus; below the umbilicus there was dullness but not flatness.

April 2, 1913, 10:30 a. m. Temperature 98; pulse 94. Pain and tenderness in the abdomen a little more severe. Calomel, grs. 2.5, was given on April 1st at 8 p. m. A turpentine enema in the morning relieved the gaseous distention some. The vomiting continued at intervals, the vomitus being very highly colored green. Tenderness around the umbilical hernia seems more marked, especially on lifting the whole weight of the abdomen.

When seen by me the patient presented the usual symptoms of acute intestinal obstruction. She was a very large woman, weighing over two hundred pounds, with a large umbilical hernia, part of which was

irreducible. Considering the length of time obstruction had existed her general condition was fairly good. Palpation of the abdomen, because of its size, was largely negative, and although there was absence of the ordinary signs of strangulation it was thought that the cause of the difficulty would be found in connection with the hernia.

Operation was advised as imperative, irrespective of the cause, and consent of the family being obtained, was done on the afternoon of the second.

Operation:

The usual transverse incision for the radical cure of umbilical hernia was made, and the sac found to contain a large amount of omentum, adherent but not strangulated. No bowel was present. The cause of the obstruction evidently did not lie there. On passing the hand into the right flank, a hard mass was felt, the size of an egg, and on delivery of a dark colored, swollen and distended loop of small intestine, the lumen was found effectually plugged by a foreign body, which the discovery of a smaller body in front and the presence of a facet on both, was sufficient proof of a gallstone. The smaller stone acted as a pilot for the larger, which latter had a rough, corrugated surface which no doubt materially increased the difficulty of its further progress through the bowel.

The intestine at the point of obstruction appeared badly affected though still viable and an effort, which was partly successful, was made to slide the stone into a more favorable locality before opening the bowel. Durng this maneuver the small stone slipped down and was not again found until it passed per rectum on the third day.

The gut was incised opposite its mysenteric border and the large stone delivered, the bowel being closed in the usual manner. A considerable portion of the omentum, adherent to the hernial sac, was amputated; as a result the remaining part was too short to interpose between the damaged gut and the abdominal wall. A superficial examination of the gallbladder region, which was all that could be made without an enlargement of the wound, showed extensive adhesion, but no special attempt was made to demonstrate the point of antimosis between the gallbladder and the intestine.

Being desirous of curing the hernia, the fascia was overlapped transversely, and the wound closed without drainage; the absence of a drain was no doubt a technical error, considering the extreme probability of wound contamination.

The patient was immediately relieved of the vomiting and other obstructive symptoms, and the progress of the case was most favorable

until the fifth day, when a slight temperature developed and on the sixth day on examining the wound, the right half of the incision was found to be infected, the left half healed primarily. In a few days, from the character of the discharge and the escape of gas, it became evident that we also had a fecal fistula. The sutured portion of the ileum having no omental covering had no doubt adhered to the under surface of the abdominal incision. There was profuse discharge for about ten days, after which the wound began to heal quite rapidly, until at the present time, May 28th, there is a very small fistulous tract with almost no discharge. The patient is up and about, but so far there is no indication of a return of the hernia.

Size of Stone:

The large stone in this case was six inches in its greatest circumference and four and one-half in the lesser; the length was two and one-half inches.

Barnard, London, *Annals of Surgery,* August, 1902, in report of three cases and a summary of five others, gives the dimensions of the stones in five:

Woman, 37 years, stone 1⅛ inches in diameter, weight 294 grs.
Woman, 63 years, stone ⅞ inches in diameter, weight 103 grs.
Woman, 68 years, stone 1¾ inches in length, 3¾ in circumference.

In the five cases reviewed by him, in only two does he give the size of the stones, they being respectively 3¼ inches and 3⅛ inches in circumference. The largest stone to which I have seen any reference is one reported by Gibson which weighed three and one-half ounces.

Frequency:

The relative infrequency of gallstone obstruction is shown in the oft quoted statistics of Leeds Infirmary and St. George Hospital. At the former only one case was seen in ten years, and the latter showed even less—one in fifteen years. Martin, in *Annals of Surgery,* May, 1912, says that the records of Johns Hopkins Hospital, together with those of the Union Protestant Infirmary in Baltimore, out of 280 cases of obstruction, show only one due to gallstone. He also states that he was able to collect but four cases from the six leading surgeons of that city, and that two of the men with the longest and most active careers had never seen a case.

Access to the intestinal canal practically always presupposes the passage of the stone through a fistulous tract between the gallbladder and the intestine. The point of communication is most commonly the duodenum, and occasionally the colon, but some very strange cases have

been reported in which the stone escaped into the urinary bladder, or into the stomach, being later vomited. For obvious reasons the stone can very seldom produce obstruction when it enters the colon, but in the small intestine, because of the gradual narrowing of the lumen, "funnel shaped" it has been called, the stone is usually arrested within a few feet of the ileocecal valve, sometimes in the valve itself. But in by far the greater number of cases the obstruction has been in the ileum.

Diagnosis:

Very few cases of gallstone ileus have been diagnosed prior to opening the abdomen. Barnard was able to make an accurate diagnosis in one of his three cases, but Moller, of Copenhagen (*A. M. A. Jour.,* May 17, 1913) in analyzing twenty-one cases of gallstone ileus in which he operated, commenting on diagnosis, says, "There had been no previous symptoms of cholelithiasis in quite a number of cases," while typical colics had occurred in only six of the twenty-two. Other observers have made similar statements, so that we can get but little aid from this source. Moller further states that "Even when the abdomen is opened, the diagnosis is difficult; in a number of instances the conditions first found were assumed to be sufficient to explain the ileus and no further search for a gallstone was made, and it thus escaped detection. In only three cases was the ileus traced to its true cause before the operation. Only four of the twenty-two patients survived; the mortality was thus 82%." In all of his cases, however, the obstruction had existed for two weeks or more before operation.

The peculiarly fatal nature of this form of ileus is shown in the experience of all other writers on the subject, the mortality following operation, in the opinion of one operator, who lost twelve out of thirteen cases, being prohibitory. Even in the recent statistics collected by Martin, the death rate is given as 69%, the reason for which he thinks to be due to the advanced age of the patient, the fact that operation is often undertaken as a last resort, and the long standing toxæmia resulting from obstruction.

DISCUSSION.

Dr. Henry Norris, Rutherfordton: I wish to congratulate Dr. Gibbon on the successful outcome of his case and I think that he has shown us a record stone. Some years ago I saw a somewhat similar case and on removing a stone from the small bowel it was seen to be facetted, so a further search was made and another stone was found lying in a bed of adhesions close to the gallbladder. An interesting point in this case was that there was no adhesion between the gallbladder and bowel. As to the

question of drainage in these cases, if the cautery and tetra pads were more used there would be less need for drainage.

Dr. M. H. Fletcher, Asheville: I think the question of drainage has somewhat revolutionized operations for intestinal obstruction, whether due to gallstones or obstruction from any other cause. In cases of lymph omental bands and other obstructions the patients got well. Since we have been draining the intestine at the time of the operation and since the operation we are getting better results. I think Dr. Gibbon's patient had a certain amount of immunity, or he would have lost the case from want of drainage.

Dr. Gibbon, closing discussion: I believe this woman had some immunity to infection. I never saw a case stand obstruction of the bowel so well, a woman of that age and type, etc. Her temperature never went over 99½. I really believe there was a degree of immunity.

ABDOMINAL ADHESIONS.

J. T. Burrus, M.D., High Point, N. C.

I am fully convinced, after observing a great many surgical cases and studying living pathology, that there is no field which demands more painstaking procedure than dealing with adhesions in the abdomen. I think of the adhesions as they occur in three locations—the upper zone, the middle zone, and the lower zone; the upper zone giving adhesions which arise from the gallbladder, the liver, the pancreas, the stomach, and the duodenum; that of the middle zone comprising the greater part of the intestines, the omentum, and the appendix; the lower zone comprising the pelvic organs.

The pre- and postadhesions in the abdomen differ in that the preadhesions are caused by some inflammatory process which has gained access to the serous surface by extension of inflammatory process or the invasion of microörganisms, producing bands of adhesion between the viscera or between the viscera and the abdominal wall, or both.

The postadhesions are usually following laparotomy. Often where the tissues are not gently dealt with, or where a rigid antiseptic technic has not been observed, in the greater percentage of cases we find the preadhesions more often than postadhesions. This, I think, is due to the rigid antiseptic technic practiced by all latterday surgeons. There is no better place to test a surgeon's real ability than in the handling of abdominal adhesions. No one should ever open an abdomen until he

has made himself proficient in this field of work, for it is here the end results of our cases hinge and oftentimes the lives.

A few years ago the laity was satisfied if their friends or loved ones passed through a surgical ordeal and came out with their lives. Not so today—they are demanding results.

"Adhesions around the gallbladder, binding it to the stomach or intestines or to the omentum, produce much interference with digestion, therefore interfering with metabolism, causing pain, nausea, vomiting, loss of weight, and cachexia. In the middle zone we find adhesions producing nausea, vomiting, indigestion, nonassimilation, malnutrition, and nervousness. Adhesions in the lower zone do not cause so much disturbance in nutrition, but the influence made on nervous phenomena is very great. The treatment is always surgical except in the post-operative adhesions; then we should never operate under nine to twelve months after an operation, unless adhesions are responsible for obstruction to the bowels." (Walker.)

Owing to the influence of the absorbing powers of the peritoneum the adhesive bands are absorbed if the foci have been removed; because of this fact a great many of these cases are reported to have been cured medically. The preadhesions require, almost universally, surgical attention, because when we can reach a case where the diagnosis is made adhesions are usually too strong to be absorbed. Many times the abdomen has been opened for some other condition to find excessive abdominal adhesions.

Adhesions are treated according to the density, length, vascularity, and the character of the adhesive surface. If fragile, they may be torn by a sponge or the finger; if dense, they should be cut; if vascular, tied, and great care should be used in the separation of such adhesions.

Sempkin says: "We have a law for the prevention of cruelty to animals; we should also have a law for the prevention of cruelty to tissues." And in no part of the field of surgery is this statement truer than it is in the handling of abdominal adhesions. Many are the cases that the surgeon has opened for gallstones to his chagrin; when the gallbladder was reached, no stones were found. He is again surprised when he sees his patient recover from the symptoms which led him to make the operation. He has done good and has unknowingly cured the patient by passing his hand around the gallbladder, separating the adhesive bands or cobweby mass that has bound the gallbladder to the liver, to the stomach, and perhaps to the intestines, or perhaps a stronger band to the falciform ligament. Perhaps there is no better way to help each other than by relating our cases. Therefore, I wish to speak of a case

which I had two years ago—a patient twenty-two years of age with a decided history of frequent attacks of severe pain over the region of the gallbladder. I diagnosed gallstones. This was in keeping with the diagnosis which she brought me from no less than four or five experienced clinicians. I advised an operation. The gallbladder was exposed—no stones existed, but there was a network of adhesions around the gallbladder, binding it tight to the adjacent visceri. These adhesions broken up, the abdomen was closed, and the patient made a quick and successful recovery, gaining her strength and weight very rapidly, and has, since that time, had no symptom of supposed gallstone colic.

Another: the second was a man forty years of age, giving a history of frequent and severe paroxysms in the left upper abdominal quadrant. Such pains would necessitate the use of hypodermics of morphine to make the pains at all bearable. Just what this condition was I did not know—I did not say, but that there was something in the region which was directly responsible for the symptoms, was evident. I advised an operation. Left rectus incision was made, the splenic flexure of the colon exposed. This had a heavy broad band encircling the entire gut. This band passed back and adhered to the abdominal wall, which adhesion had well nigh closed the entire lumen of the bowels. I excised this adhesion and closed the abdomen. The patient has gained in nutrition and strength back to his former weight and not a symptom or the slightest evidence of a pain has existed since that date. He is now apparently well.

Again, another case, unusual and interesting: Arnold B., a child of eleven years, previous history negative, was taken with severe pains in the right abdomen. His physician, Dr. Peacock, saw him, and compelled the family to submit him to an early operation. We opened the abdomen and found a gangrenous appendix with free pus in the abdominal cavity. The appendix was removed, the pus wiped out as much as possible, and three very large drainage tubes were left in, one tube extending up to the subphrenic cavity, another was placed in the pelvis, and another drained from the appendiceal site. The little patient did so well for fourteen days that we thought we had won an easy victory. On the fifteenth day he began with pains, severe in character, to the left of the umbilicus, with nausea and vomiting. There was some distention and tenderness at this time. The temperature rose only one and one-half degrees, but the pulse became very rapid. An enema was ordered which gave good results, relieving the symptoms for a while. Nausea and vomiting persisted, pains more severe, with great distention. After every effort to relieve this condi-

tion, which had existed for seven days, with a temperature of 102, pulse 180, at 2 a. m. we made a median incision. I removed fifteen distinct bands from around the gut, each of which had as completely closed the lumen of the bowels as you could close it by encircling it with a ligature, and making it tight. These adhesions existed in all parts of the abdominal cavity and were dense. The small intestines were so distended with featus that it was impossible to return the intestines to the cavity, so we used a long intestinal tracer and threaded every inch of the small gut on to this, which enabled us to readily return the intestines. Again, as unexpected as this case was unusual, the child made a beautiful recovery.

Many are the symptoms we meet—stomach or liver disorders, and refer our patients to gastrointerologists, when these patients are carrying well defined and distinct adhesive bands in the abdominal cavity. I have had no extensive experience in the observation of oxygen in the abdominal cavity for adhesions, but I believe that in postoperative adhesions, to fill the abdominal cavity with oxygen and leave it, would be well for our cases.

RECTOURETHRAL FISTULA.

J. W. Squires, M.D., and A. J. Crowell, M.D., Charlotte, N. C.

A review of the literature on rectourethral fistula shows that numerous operations have been devised to expedite a cure, but few have proven successful.

Young[1] has advised an operation, which consists of a suprapubic cystotomy, for drainage of bladder, and closure of the rectal and urethral fistula separately, through the perineum. Another operation has been reported by Tuttle[2], which he considers more satisfactory, simpler, and less dangerous, because it does not require a suprapubic cystotomy. This feature of Tuttle's operation has the advantage of eliminating the liability to an infected bladder, which may follow the suprapubic cystotomy.

Dr. Crowell began this operation of Tuttle's in 1901, and since that time we have operated on six cases and have obtained satisfactory results in every case.

Tuttle's[3] operation is as follows: The rectum is incised in the median line anteriorly, the cut being carried through into the urethra and extending from the scrotal juncture of the perineum into the fistulous opening. The cicatricial tissue around the entire fistula is trimmed

away with scissors. The intestinal wall is then dissected from its anterior attachments for three-fourths of an inch above the fistula, and one-half an inch to each side; a flap is then dissected from the soft tissues on either side of the urethra large enough to replace that portion of the floor of this organ which has been destroyed. A steel sound (No. 30 French) is introduced into the bladder, and these flaps sutured together over it at a slight tension. Secondary flaps are taken outside of the first flaps and entirely surrounding them, making a sort of cuff to the first area sutured. The edges of the rectal wall are sewed together in all their thickness with chromicized catgut down to the external sphincter muscle, at which point the mucous membrane is dissected loose for a short distance to each side, and drawn together by stitches which do not involve the muscle. The incision into the urethra from just below the site of the fistulous opening is left unsutured. A number twelve soft rubber catheter, introduced through the meatus into the bladder, is fastened there by adhesive straps attached to the head of the penis. The anterior portion of the perineal incision is loosely packed with absorbent gauze, and a large size drainage tube introduced into the rectum to facilitate the escape of gas. The catheter seems to cause the patient no inconvenience, and it is left in position for eighteen days, the bladder and the perineal wound being irrigated daily.

The six cases in which we have carried out the technique as described by Tuttle have extended over a period of years, from 1901 to the present, the last operation being two months ago. We varied somewhat from Tuttle in that we closed the incision into the urethra entirely and packed gauze drain lightly on the outside of the urethral incision. We found this procedure to be satisfactory and to undoubtedly shorten the length of time for complete healing of the wound.

Postoperative treatment consists in giving seven and one-half grains of urotropin tid, and daily irrigations of the bladder with saturated boracic acid solution. For five days following operation by limited diet and use of morphine, peristalsis of intestine is reduced to a minimum and there is no bowel movement. On the sixth day a laxative and an enema of oil and glycerine is given. From this time the patient is given regular diet, a mild laxative daily, and an enema of oil and glycerine as soon as he feels an inclination to go to the stool.

In our cases we noticed that often a small amount of feces and gas escaped from the rectal wound but this eventually healed. The average length of time of patient in hospital was four weeks. The catheter

was always removed on about the eighteenth day, at which time the urethral fistula was found to be closed.

We report this operation for rectourethral fistula because it has proven very satisfactory. We, however, do not mean to intimate that it is a very easy one to carry out, as the operation is difficult and tedious, and so is the postoperative treatment.

To sum up, the important points to be considered are:

First, to carefully dissect the rectum loose from its anterior attachments for a distance above the fistula, split open from fistulous tract down through both external and internal sphincter muscles, and then suture rectum, leaving out the sphincter muscle.

Second, secure good flaps of tissue to close around urethral fistula.

Third, proper drainage from both rectum and bladder.

We consider a soft rubber catheter retained in penis sufficient for drainage of bladder. The suprapubic cystotomy is unnecessary because it adds an additional complication. There is also a possibility of an infected bladder or peritonitis, in addition to prolonging the length of operation.

[1] Young, Hugh H.: Rectourethral Fistula.—Johns Hopkins Hospital Reports, Vol. XIV, 1906, p. 482.

[2] Tuttle, James P.: Rectourethal Fistula, Diseases of the Anus, Rectum and Pelvic Colon.—pp. 435-436.

[3] Tuttle, James P.: See reference 2.

CONGENITAL PYLORIC STENOSIS, WITH REPORT OF CASE.

Lyle S. Booker, M.D., Durham, N. C.

There is at least one condition of the alimentary tract in early infancy which demands surgical treatment. The pediatrist must concede this one condition, and the surgeon must make good his claim. Then one more cause of infantile death will be known, and may be averted.

The first reported case of congenital pyloric stenosis was by Hirschprung, in 1888. The first successful operated case was by Lobker in 1898; since this time the many reported cases have clearly established the clinical picture and pathologic anatomy. However, there is still considerable diversity of opinion in regard to many points of pathogenesis and treatment.

This diversity is, no doubt, in a large measure due to the fact that two types of condition exist and have been referred to under the same name. One, a simple spasm of the pylorus with some hypertrophy of of the pyloric ring and pyloric end of the stomach. The other, in which

the spasm is associated with a true hyperplasia in the walls of the stomach and duodenum.

These two types of disease probably stand in close genetic relation to each other, but practically they are very different. One, a functional trouble and a medical disease. The other, a true organic obstruction and amenable to surgery only. Of the latter condition I beg to report the following case with courtesy to Dr. W. W. Olive, in whose practice this case occurred.

Ralph D.—The fourth child of healthy parents, was born at full term after a normal labor. He was normal at birth and weighed eight pounds. The first four weeks he was nursed at two-hour intervals and made decided gain in weight. During the fifth week he began to vomit at irregular intervals and to be constipated. The vomiting sometimes occurred immediately after feeding, but usually not for an hour or more. Sometimes several feedings were retained and then vomited together.

In spite of the very best medical and dietetic treatment the vomiting and constipation had progressively increased. The vomiting had become explosive in character, and the constipation almost absolute. Enemas and purgatives failed to produce more than small actions of bile-stained mucus. No milk curds were in evidence. He acted hungry at all times and cried a great deal, apparently from hunger.

When seen in consultation, then eight weeks of age, his weight was one pound less than at birth. There were present all evidence of malnutrition and marasmus. One was struck by the prominent appearance of the epigastrium as contrasted with the retracted sunken abdomen below the umbilicus. Visible waves of peristalsis passing from left to right were easily seen. No distinct tumor could be palpated.

Examination of heart, lungs and nervous system was negative. Diagnosis of pyloric obstruction was made and operation advised. Patient admitted to Watts Hospital, April 20, and after usual preparation ether was administered and abdomen opened through a right rectus incision. The pylorus and duodenum, free of all adhesions, presented a small mass about one inch in length, size of distal phalanx of index finger, smooth and of cartilaginous firmness.

A posterior gastrojejunostomy was done after the method of Moynihan, using fine pagenstacher linen and zero catgut. Nothing was done to the pylorus, as nature had nicely obliterated this opening. Abdomen closed in usual manner and child returned to bed.

Postoperative Course.—Shock was insignificant, vomiting of bile at intervals for several days, and almost immediate improvement in child's condition, both favorable signs. Rectal feeding was done for first two days, then mother's milk was begun and continued. Patient was discharged from hospital in ten days, having gained a pound in weight.

Now, two months since operation, baby weighs fifteen pounds, fat and plump, rarely eructates his milk, and bowels are moving normally.

I wish, now, to speak of the more important and accepted facts, namely, the pathology, diagnosis, prognosis, and treatment.

Pathology:

In the face of its occurrence in the very young and almost exclusively breastfed children, its origin can scarcely be considered as being due to disturbances of digestion, disease of the mucous membranes or abnormal, chemical processes. Its etiology is therefore obscure.

A tumor is always present—a passive tumor; muscle stimulation is not necessary for its existence. This forms a mechanical structure just the same as a strictured urethra or bileduct. There are no adhesions or products of inflammation about it. It represents an overgrowth of muscle tissue.

Microscopically the most important change is the great increase in the thickness of the circular muscular layer. To a lesser degree hyperplastic changes in the longitudinal and the connective tissue of the submucosa.

Diagnosis:

The appearance of vomiting in otherwise apparently healthy breastfed children, progressive and continuous, explosive in character, containing no bile; fails to respond to medical or dietetic treatment. The small meconiumlike stools, containing almost no fecal residue, is not consistent with any other condition.

Physical examination verifies the diagnosis. The empty retracted abdomen below the umbilicum, the full and distended epigrastrium, the visible peristaltic waves and the palpable tumor are proof positive.

Prognosis:

Treated medically most cases of congenital pyloric stenosis die of starvation, and marasmus, inanition, acute gastritis, catarrhal dyspepsia or pyloric spasm are credited on the death certificate.

Some cases of moderate degree get well, many of which, however, have to be operated before reaching maturity.

Dr. Murphy's February (1913) clinic reports a case two years of age weighing only thirteen pounds.

The estimated mortality from an expectant medical treatment is between 80 and 90% (Monier).

What, then, does surgery offer?

From the first successful operation in 1898 to 1905, a period of seven years, the operative mortality was 46.5%. A high mortality, but a great improvement over the medical mortality.

Since 1905 the mortality has been lowered to less than 10%.

Dr. Scudder, of Boston, reports a series of thirty-three cases operated by different surgeons in the United States, with three deaths—a mor-

tality of 9%. The same author in *Surgery, Gynecology, and Obstetrics,* September, 1910, reports a series of interesting investigations on the effect of gastroenterostomy in digestion and metabolism. Of fourteen cases studied two to five years after operation, he concludes that with all chemical evidence and clinical facts considered, the evidence is overwhelming that in these babies gastroenterostomy has no ill effect on metabolism and normal growth and development. He further proves by X-ray examination that the obstructive tumor persists and that the operative stoma continued to functionate and accommodates the child in after life.

Treatment:

If, then, our pathologic picture be correct, the treatment will be obvious. No one would attempt to treat a mechanically obstructed esophagus, intestine, bileduct, or urethra medically.

The two indications for surgical treatment are:

First, to meet the emergency of starvation by overcoming the obstruction at the pylorus.

Second, to restore the continuity of the alimentary tract so that it may serve the individual through life.

The best operation to meet the demands is the posterior gastroenterostomy.

Conclusions:

1. The pathogenesis of this condition is unsettled.
2. The diagnosis is usually not difficult.
3. The indications for surgical treatment are common sense ones.
4. The operation best suited to this condition is the posterior gastroenterostomy. It is ideal in that nature has prevented the possibility of a viscious circle by obstructing the pylorus.
5. The operative mortality is low.

DISCUSSION.

Dr. Lewis W. Elias, Biltmore: Dr. Booker has certainly handled this subject in the most satisfactory manner imaginable. He has covered all the details. The disease is rather rare. Some of the general practitioners are not always on the lookout for it. It is a healthy sign, so the grandmothers say, when a baby spits up its food, and unfortunately this absurdity is frequently allowed to pass without stopping to consider how much explosive force there is in the spitting up.

Not many of us see a case of pyloric stenosis, and it is a little hard to say at the beginning whether it is a medical or surgical case. Every

case should have the benefit of a medical trial before resorting to surgery. Although the operative mortality has been brought down pretty low the statistics are from expert operators, who are the only ones who try this operation. A baby reduced by starvation is not an ideal subject to operate on, and it is worth while to try medical measures, rest, careful nursing, stomach washing, etc., before concluding that a case must necessarily go to the surgeon for operation. On the other hand it is absurd to wait until there is no hope. The question of when to operate is very hard to decide, and as Dr. Booker suggests, common sense is about the only guide. Don't let the child go until there is no hope, but never operate until medical measures have been fully tried.

Dr. R. L. Gibbon, Charlotte: A year or two ago I had an opportunity of seeing a well marked case of this character. This case fell into my hands during the absence of the family physician. The stenosis came on about two weeks after the birth of the child. The child was treated by a number of men, but for one reason or another was never subjected to an operation. The parents did not receive my suggestion of an operation very favorably, and on account of the uncertainty and on account of the reduced condition of the child it was not insisted upon. If you are not certain in your own mind in these cases the doubt is speedily transmitted to the parents, and they will decline operation. This infant had all the symptoms, projectile vomiting, etc. This child died, and in due course there was another child, which did well for about two weeks and then began to vomit its food. The medical attendant, together with the parents, became panic stricken, and he advised them to take the child to New York. They took it to Dr. Winters, and he did not regard it as a case of pyloric obstruction. The child was kept in bed, not allowed to sit up, but made to lie on the right side, and a long and tedious period of nursing and care was instituted to bring the child through. The child is now about six or seven months old, not robust, but it is improving, and bids fair to get entirely well.

I would like to mention a very peculiar case that came under my observation. A little child a few days old was observed to vomit all its milk, and there was no evidence at all of milk in the stools. The attending physician attempted to pass a soft rubber catheter into the stomach, but met with a complete obstruction. The case progressed and starvation became imminent, and a gastrostomy was done, but the child finally died in three or four days. A postmortem was performed and it was found that the esophagus, a few inches below the fauces, was nothing but a fibrous string, no esophagus at all.

Dr. J. W. Long, Greensboro: In discussing Dr. Booker's paper what I shall say can be applied generally to all the papers read, if I may be permitted to talk in that strain. I want to say that in a professional sense I feel a fraternal interest in the surgery of North Carolina, therefore in her surgeons. In 1893 I read the first paper that was ever read before the North Carolina Medical Society on the subject of appendicitis, and I reported five operations, which was considered remarkable. No other member could report a case, or certainly not so many as five. I remember that Dr. E. Burke Haywood said, in discussing that paper, that he was interested in the young doctor's paper, but that he had been practicing medicine forty years and had seen only one case of appendicitis, and that got well without an operation. I refer to this ancient history simply to express my pleasure in the tremendous strides made in surgery in North Carolina since that time. It is my privilege and pleasure to touch elbows with the best surgeons in America every year, and remembering the character of the papers that they read I would like to say that I would not be ashamed to compare the papers read here today with those written by the great surgeons of our country. I say without hesitation that I would have been proud to have had any of those men present this morning to hear the papers with which we have been entertained. What we have heard this morning should be an encouragement and an inspiration to the physicians of North Carolina. It shows that we have men who have the enthusiasm and knowledge and energy to put into application the science of surgery, and that we do not have to go out of North Carolina to find men who can do the highest type of surgery. It is with pride which I think is pardonable that I submit these remarks, and I believe that North Carolina has a bright and glorious future before her along surgical lines.

Dr. P. R. Hardee, Stem: I have enjoyed the papers that have been read this morning, I suppose, as much as a general practitioner of medicine could enjoy them. Dr. Long's remarks brought me to the floor. I remember well the period when the people did not die of appendicitis, but with typhilitis or paratyphilitis. Later these cases were recognized as appendicitis, but it was only about 1890 that the best surgeons were able to diagnose these cases as appendicitis. Time went on and we general practitioners acquired more and better knowledge, not only of medicine but of surgery. And today we, the country, crossroads men, can recognize appendicitis even in its acute stage. You surgeons know very well that in the acute stages of appendicitis, before the disease locates, there are symptoms of acute indigestion. We can now recognize

it as appendicitis in this stage and tell our patients they have appendicitis and not acute indigestion.

Why has surgery increased? Why do you surgeons get more patients today? It is owing to the better information of the general practitioner, who is usually the man that sees these patients first, and the crossroads doctor, knowing that it is a surgical case, is anxious to turn it over to competent hands.

I started out by saying that I have enjoyed the papers as much as a general practitioner could, but I am here to tell you frankly that these papers on surgical technic of gallbladder and gallstone operations have been a little over my head as a general practitioner of medicine. I am here to tell you that what the crossroads doctor needs is not surgical technic, but diagnostic acumen of these gallbladder and gallstone as well as other internal surgical affections. Since we general practitioners have been able to diagnose appendicitis you surgeons have been busy removing the appendix, and what we need from you surgeons next year is not surgical technic of the operation but a description of symptoms, so that we can recognize these internal surgical affections, then we will put you busy in another field. It may not be amiss in this premise to illustrate a case substantiating what I have said. On one occasion I had a patient who presented a typical case of gallstones. She had been suffering with gallstone colic for twenty-five years. On this particular occasion, as the pain was unbearable, I called in consultation a man whom I considered to be the best I could get. He verified my diagnosis of gallstones, so, having a surgical affection on our hands, we rushed the patient off for the necessary surgical operation. When the operation was performed to my great surprise there were no gallstones, but we did find a gallbladder distended with inspissated bile. The gallbladder was drained and the patient restored to perfect health. But had we been able to distinguish the difference between cholecystitis and cholelithiasis we might have treated this case with large doses of olive oil and cured a case of gallstones with this treatment which we find so graphically pictured out in our textbooks on practice of medicine.

Dr. A. J. Crowell, Charlotte: I think the Society owes Dr. Hardee a vote of thanks for the suggestion that he has made to the Society. I have felt just what he mentioned a while ago: that we ought to talk more about diagnosis. We have been a little afraid to talk about diagnosis and more especially to emphasize the little points for fear of being criticized. It is the little points that count. We want to talk more about symptoms and diagnosis.

Dr. J. Allison Hodges, Richmond, Va.: Experience meetings do us all good, and Dr. Hardee's remarks have called me to my feet, as also the suggestive remarks of Dr. Long. It is for this reason I do not believe, since Dr. Long has become paternal, that I ought to let him take precedence of me in interest and enthusiasm in the medical profession of North Carolina and what the young men are doing. The same thought occurred to me and I think that it is the thing that makes men of us, namely, being told about the work that we do while we are living and while we can enjoy the encouragement of our fellows. It is for this reason that I wish to say that I believe no man in the past or the recent past has stood more for the advancement of pure, simple, old time, old fashioned medicine than myself, living as I do in a city that is hedged in by enthusiasts in surgery and bordering upon the North, from which the wave first came to us which came near eclipsing the medical men a few years ago.

I wish to say that I believe more sanity has come to the general profession because of the very facts that are in evidence here today, and which are of great credit alike to surgeon and to doctor. It is this, that nowadays the surgeon and doctor are consulting together, and furthermore are working together, not for personal gain, nor for personal interest, but for the best interests of the profession and of the patient. I do not wish to be personal, but probably no man in the South has had opportunity to judge as I have had the mistakes of surgeons, for I have largely made my living in the years gone by and through patients that have passed through surgical hospitals, when, if they told some of their surgeons the same history they gave to our reporter, I can not understand the necessity for some of the surgical operations that were performed. I believe that these surgeons, in the enthusiasm of their profession, believing, as many of them had been taught to believe, that if there were any abnormality present it should be removed, and having that as the basis of their operations, overlooked another and important thing—the temperamental and constitutional conditions of these patients, and the surgeons were in too great haste and did not study their patients faithfully and well before they invaded the abdominal region. I say great light has come to the surgeon and to the medical man, because the one has taught the other and each has learned from the other, to the betterment of the profession. I am glad of it. No man rejoices more than I do in seeing the excellency of the talent of this young blood. I feel proud of the young man who read the last paper, for he is one of my progeny, as it were, and his paper is but in keeping with every single surgical paper that has been read here this morning, and I have come

here as a medical man to sit at the feet of these young men and learn, because I can not practice my profession unless I keep in a measure under the shadow of practical men like Dr. Hardee, and sit at the feet of my fellows and learn everything I can for the advancement of the profession of medicine, to which I have devoted my life.

I wish to say, as Dr. Hardee and Dr. Long have said, that I am proud of this profession as manifested here today, and I think it should be an encouragement to you all to meet together, elbow to elbow, shoulder to shoulder, and work out together, surgeons and doctors, these great problems, none of which either is able to work out to the best advantage, alone and unassisted.

Dr. L. S. Booker, closing discussion: Gentlemen, I wish to thank you all for the discussion. Such remarks from Dr. Long and Dr. Hodges are very encouraging to the young blood. I am sure we appreciate it deeply. We hope to be worthy students of our able preceptors. In conclusion, the important fact for all of us is the diagnosis. If the cases of pyloric stenosis are recognized and diagnosed intelligently I think many of them may be saved by proper surgical intervention.

PELLAGRA, SURGERY, THE COLLOIDS AND STRONG DRUGS, ALSO INTRODUCING A POSSIBLE NEW ETIOLOGICAL FACTOR.

Harlan Shoemaker, A.B., M.D., Surgeon Shelby Hospital, Shelby, N. C.

Situated in an isolated and rural community, it has been possible for me to observe a number of cases of pellagra develop from the very incipiency of a gastrointestinal disturbance into a profound pellagrous explosion. These cases have shown every variation of the disease in its course, development and termination. In 1910 there were known to me about ten cases of pellagra in Cleveland County; in 1911 I could easily figure up fifty; in 1912 one hundred, and this year the incidence of this disease is about that of the measles.

As these cases have terminated in a variety of ways and as some of the methods used in the treatment of these cases are even more varied, I introduce them to you, hoping that without further confusing you I can suggest a possible new factor in the etiology of this disease and a rational explanation of the uniform results obtained by so many divergent means of treatment.

First, let me say that this paper is not a statistical study of pellagra, but that the prevailing idea has been obtained by me through a careful

study of the case at hand. Some of my points I shall try to verify to your satisfaction out of my own experience and from that of others. I realize that these views set forth are so divergent from the accepted teaching that I may seem contentious. Those familiar with this subject know that pellagra was first thought to be a disease produced by infected corn and of nervous origin—observe the vast amount of literature written on the nervous phenomena of this disease by the great nerve specialists. Next it was described as a gastrointestinal intoxication, and last an infectious disease produced by a parasitic host with its attendant phenomena.

To begin at the end, my cases have terminated as follows: Some have recovered by means of the hypodermic administration of strong drugs; some have recovered by the agency of a variety of operations; and some have recovered spontaneously; some have died, though I am happy to state that all of the operative cases, including two who went insane, have recovered and escaped pellagrous symptoms one season.

What fundamental condition could cover such a variety of procedures?

The office case histories of indigestion in 1910 proved to be the pellagrous infections of 1911. The symptoms of 1910 were mild epigastric disturbance of digestion, accompanied by small apthæ of the tongue and buccal mucous membrane, excepting that over the alveolar process with some numbness and tingling of the hands and feet. Hypoleucocytosis and a slight loss of weight is frequently added to this symptom complex. The latter symptom has amounted to a loss of one-fourth to one-third of the body weight between Christmas time and the month of May. As I have said elsewhere, when the rash appears, a countryman can correctly diagnose pellagra. Inasmuch as the early diagnosis of this disease means so much toward the success of the doctor and the recovery of the patient too much stress can not be laid upon these symptoms when found to persist over some weeks. Diet and medical treatment are most efficacious at this stage, and all suspects should be put upon proper diet and medication at this time.

During the year 1910 all the pellagra seen by me either lived or had contact at Earl, N. C., a very small hamlet eight miles south of Shelby. Some of these cases were six miles west and twelve miles east of Shelby, but all gave a voluntary history of contact with pellagra cases at Earl. This suggested a contagious nature of the disease and it suggested a fly belt at Earl. Since then the spread of pellagra throughout the Piedmont section has been so rapid that all lines of contact have been lost. While on a trip to the Pacific coast during the winter of 1912, I stopped over

thirty-six hours in a city of 50,000 in northwestern Iowa. There I saw two cases of pellagra, although I was not in consultation with any of the profession. A subsequent newspaper clipping tells me that they have since awakened in Iowa. Two cases were also shown to the county medical society of San Francisco. Pellagra is scarcely a problem of the South; it is national in scope. To my mind the general distribution of pellagra should discourage that element of the profession which elects to act as medical director, telling the patient which climate to choose and where to find it. Disease should be treated at home. There lie all the economical and social advantages. Much has been done along certain lines, especially by the neurologists, on the pathology of pellagra, though on the other hand, almost nothing has been done toward the pathology of the early symptoms.

I have deliberately opened the upper abdomen in two early cases of pellagra for the purpose of draining the gallbladder and I was fortunately able to remove the appendix through this high incision. The head of the pancreas was firm and thicker than the body. A number of œdematous lymph nodes were easily seen and felt. The biliary fistulæ drained dark colored bile for six days in both cases, when the flow became characteristically greenish yellow. Drainage was removed on the tenth day. Patients were discharged from the hospital on twenty-first day. One, a male patient, has had an uneventful recovery, the other, a female, became pregnant and nearly lost her life from recurring intestinal symptoms. She was aborted and is just now recovering her normal weight. Both patients had a hypoleucocytosis.

The condition found in the lymphatics in these two cases agrees with the autopsy findings in four cases reported by H. P. Mills. Wood writes that the pancreas is not reported to be affected in pellagra and I have not been able to find any reference to involvement of this particular gland, nor any other of the deep structures of the upper abdomen, such as the great plexus of nerves below the pylorus, or even the receptaculum chili. Still pellagrins complain of distress in the upper abdomen six to nine months before they really dispense with the diagnostic ability of the physician. When the pellagrous explosion does occur and all the pathognomonic symptomatology is lined up like a row of tenpins, one can feel beneath the buccal mucous membranes along the lower border of the inferior maxilla, especially if the submental tissues are supported by the free hand, a chain of lymph glands. Moreover all authors agree that there is an increased flow of the submaxillary and sublingual glands.

Would it be fair to suppose that an analogous condition possibly

exists in the pancreas when the descending duodeneum is affected? Many authors speak of a characteristic odor of the stool in pellagra. I can easily duplicate the odor in vitro. Mince finely some pancreatic tissue from the dog and allow to stand in an open beaker. When fermentation is well advanced the typical odor of a pellagra stool will be obtained. Pellagrins do well on a high protein diet. Would not this factor suggest an altered function of the pancreas? Ferments or fermentable foods annoy the pellagrin. Might not this suggest an alteration of the principal digestive ferments?

One more fact along this line, taken from Niles' book on pellagra, before I leave the most interesting phase of the subject to the surgeon. On page 90, fourth paragraph, Niles writes, "In *one* instance the writer had the opportunity of examining the duodenal contents of a pellagrin. The contents were obtained by the Einhorn duodenal bucket which was withdrawn ten hours after swallowing. The contents were golden yellow, thick and turbid, and showing no reaction for trypsin. This of course, proves nothing, being mentioned only as a matter of interest." Again he writes, on page 125: "One of the most difficult complications to manage is the condition of marasmus or wasting away, into which the pellagrin sometimes lapses. A liberal diet seems to aid *not at all,* and emaciation rapidly supervenes, bringing with it apathy, mutism, lessened tendon reflexes, and muscular rigidity."

Now let us recall the six to nine months of gastrointestinal disturbance and the high protein diet. If one of the three most important digestive ferments were destroyed in your patient and the patient in turn lost about one-third of his body weight in five months, what would you think? The chemistry of the descending duodenum must be variously disturbed in pellagra because the diet which the individual pellagrin finds suitable to his economy has not yet been completely described.

Any attempt to introduce a new factor in the etiology of pellagra, unless it can be absolutely proven to be of its true etiology, must necessarily add to the confusion that already exists. However, the suggestions put forth are necessarily forced upon us because of the tendency of one school of thought to accept the fly theory of pellagrous infection. My wife ventured the suggestion last year that the common fly would be found to be a carrier of pellagra.

Jennings and King think from their survey that the stable fly (*stomoxys calcitrans*) is the possible carrier. The common house fly (*musca domestica*) may be a mechanical carrier. They fail to find the "jigger" (*Sarcopsylla penetrans*) and do not mention the common biting mite which country people call "jiggers." Riley says in reference to

jiggers, "The two mites described below cause great annoyance from harvest time till into October to people who frequent the rank herbage and grass in our forest openings or along our rivers. Both of them are six legged reddish microscopic species and both of them are popularly termed in the United States, 'jiggers.' The term is evidently a corruption of 'chigoe,' the name universally applied to the more dangerous *Sarcopsylla penetrans*—(sand flea), which will be described later and the term 'harvest mites' is preferable." In some sections of the Piedmont "red bugs" is a popular term. "Dogs and cats from their prowling habits in field and garden, suffer greatly, and they scratch and nip their skin with their teeth, so much so that they are sometimes supposed to be suffering from the itch, when it is only a reinforcement of the mites. Mites do not deposit eggs in the wound they make, and soon die victims to their sanguinary appetite." Nathan Banks writes, "To the ordinary person mites do not exist. Occasionally he may have painful evidence of their presence, but he has no idea of the number of specimens and species around him."

I removed from my clothes the second simulium of the season, March 25, 1913, and a short time prior to this saw the first of the season. Shelby has been deluged with them this season. About the middle of March while counting blood, I impaled a female house fly, fat and pregnant. On her ventral side I saw two mites and a week later found one in a fly egg. To me this was a great discovery, but I soon found that the government expert in mites (*acarina*) had made it ancient history. My mite corresponds to the species *Leptus Americanus* (Riley) and is the predaceous six-legged parasite of the genus *Trombidium* (eight-legged); order, *acarina;* class *arachnidæ*. This predaceous mite (*Leptus Americanus*) moults several times before it becomes the adult "red bug" visible to the naked eye. There are other "red bugs" common to this vicinity, but they are not parasitic on flies *acarina gallinæ* (Redi), a chicken mite and (*dysdercus suturellas*) a cotton stainer.

Jennings and King mention F. Knabs' four factors necessary for an insect to become a potential transmitter of disease to human beings: (1) Habit of biting a man regularly; (2) a more or less close association with him; (3) a certain degree of longevity; (4) abundance of the insects.

I mentioned to a lawyer friend the possibility of the fly being the winged host of a parasite obnoxious to man, and suggested "mites, red bugs, or jiggers" as carriers of disease. He promptly replied that he had been bitten many times by "red bugs" and did not have pellagra. So have the people of California been bitten many times by fleas and they

do not have the plague. Consequently we must add a fifth condition to Knabs' four factors: The biting insect must be infected. Flies of all species, mosquitoes and the simulidæ all carry parasitic mites. Are they predaceous and obnoxious to man? This remains to be seen. So long as the good housewife gets pellagra twice as frequently as the man in the field, we may suspect something about the house; but there is an objection even to this, as among the nulliparous woman the sex incidence is even. Pellagra is the best gynecologist since Marion Sims' time.

We have one analogy of a predacious parasitic mite being obnoxious to man. Schamberg and Goldberg describe such a mite, *Pediculoides ventricosus*—straw disease, and the entomologist Banks has identified and classified this mite. It is predaceous upon the larva of the angoumois grain moth (*Sitotrogo cerealella*) and the wheat straw worm (*Isosoma grande* Riley) and the joint worm (*Isosoma tritici* Fitch) a small black fly the size of a gnat. This mite bites vigorously. Anyone having camped at Gettysburg is probably familiar with its bite. The foregoing does not place the etiology of pellagra upon the fly as a winged host, nor upon a predaceous mite (*Leptus Americanus*), but it does place upon any doctor or entomologist attempting to establish or suggest the fly as the carrier host of a disease the burden of proving that the flies are free from predaceous parasites obnoxious to man.

Any fly theory of pellagra is open to two possible modifications by mites. First, the mite limits the fly population by destroying the fly larva. If the fly is proven to be a carrier of pellagra and the mite is its natural enemy, the mite thus plays a role in the waxing and waning of this disease through the destruction of fly larva. Second, the fly is a winged host of this mite which may be regarded with suspicion. We know of one fly, the wheat joint worm (*Isosoma tritici* Fitch) carrying a parasitic mite obnoxious to man as described above. And furthermore, Banks has described these larval mites on simulidæ, flies, and mosquitoes.

R. M. Grimm says on the relation of pellagra to the 296 families investigated: "In this connection there might be mentioned a fact which seems to me to be of considerable importance. This fact is that in many instances where the family had one or more cases of pellagra some one or perhaps several other members of the family would be found to present signs and symptoms very suggestive of pellagra, but to an extent not sufficient for a positive diagnosis. These signs and symptoms in many instances seem to differ from those presented by the pellagrous member only in degree and not in kind. Among the symptoms in ques-

tion may be mentioned mild gastrointestinal or nervous disturbances, the presence of a beefy or of an abnormally red tongue. The previous histories of some of these cases were also very suggestive of pellagra. Persons presenting signs and symptoms such as these were also seen in several of the pellagrous communities who were not members of families having definite case of pellagra. There were seen a great many of these borderline cases, the diagnosis of which was not always made with ease. For purposes of advice and treatment these cases would undoubtedly be considered as early cases of pellagra and in fact this diagnosis was the most probable one in the majority of instances, but for the purpose of my work they have not been considered as true cases of pellagra, on account of the element of uncertainty in the diagnosis. I have learned that some of these cases which were only suggestive of pellagra at the time of my visit have since developed the disease in pronounced form and succumbed to it, so without doubt it was the very early stages of the disease from which some, at least, of these persons were suffering at the time of my visit. The fact that many such cases exist is of considerable importance in considering the pellagra situation in a family or in a community, and, although it can not be considered as evidence definitely positive, it may, with propriety, it seems to me, be considered as data of an important collateral nature."

Grimm has seen pellagra early and admits it, but thinks it only may "be considered as data of an important collateral nature." What opportunity is there in arriving at an etiological factor in a disease that is admitted to exist nine months before an absolute diagnosis can be made, that then runs a well defined course which the ordinary farmer in many parts can diagnose and terminates in insanity, death or recovery as the case may be? What opportunity is there two or three years after the onset of the disease to discover an etiological factor? Some of these early cases being opened for gallbladder drainage and appendectomies present the opportunity to study the sterile fluids of such drainage with profit.

Pellagra in my experience begins, and for six to nine months remains as a mild catarrhal indigestion confined to the upper abdomen. I have had four opportunities to verify this conception. Two I accepted, one I refused, and one patient was admitted to the hospital and died during my absence. The case refused operation and the case not seen by me both died in the same manner—both vomiting themselves to death; the former was on rectal alimentation six weeks. The two gallbladder appendectomies are both well and have passed one summer without relapse.

In both cases there was evidence of pancreatic lymph nodes and some firmness of the head of the pancreas.

Appendicostomy, to my mind, as an operation for the relief of pellagra, is like the entomologist nine months behind the infection or the neurologist two years later. Appendicostomy is about twenty feet from the primary seat of the disease. Almost any operation apparently improves pellagrins by stimulation of the blood-making organs and certainly any necessary operation is actually demanded that will improve the well being of these patients. For instance, note the preponderance of pellagrins among females suffering from birth traumatism of which one reads in the statistics of every field investigator on this subject. Motherhood pays the penalty. Let me indicate how far one may safely go in this matter by quoting three operative cases. One case which I knew had pellagra the previous year had a completely lacerated perineum three inches up the rectum, the two unknown cases were both those of well marked cancer on the cervix and lower uterine segment. The perineal case was pellagrously emaciated and controlled the bowel by constipation. She made an uneventful recovery and is in good flesh without a pellagrous relapse for one summer. The two cancer cases after a vaginal hysterectomy in each, went insane, one four days, the other seven days after operation. The earlier insanity lasted the longest and a dry bran-like scale sharply demarked from the smooth skin of the forearm told part of the story. The second case threw a good rash and admitted a previous one the year before. Both of these cases are in a perfect state of health as to cancer and did not suffer a pellagrous relapse last summer. Moreover I shall never again stand idly by with a stomach tube in one hand and a rectal tube in the other while a pellagrin is in need of drainage. Gallbladder drainage is the operation of election, because it is as high in the alimentary tract as it is necessary to drain and being an operation of election should be accompanied by an appendectomy. There is no telling how many "bugs" this little tube will hold.

I have observed patients recover from pellagra by such a variety of treatment that at first I thought it to be all a guess and later I began to look for some fundamental factor. Patients with pellagra have recovered from the Shelby hospital by aid of surgical operations upon the gall bladder, appendix, and pelvic organs and muscles. Patients have recovered by the use of strong drugs; especially, metallic drugs. Two patients have recovered spontaneously. The possibility that a patient in the lowest state may make a spontaneous recovery should warn the physician never to give up. The first spontaneous recovery I have seen occurred in a woman who has now passed two summers without relapse.

I saw this patient six months before any pellagrous symptoms began. An old Potts disease of the spine was beginning to warp her back. She came down with an acute attack of pellagra, went from bad to worse, until she lay on the bed in a state of suspended animation. She had a marked rash on her arms and neck. In this condition I photographed her. The picture appears to be that of a cadaver. Within ten days the woman walked out of the hospital and has been well ever since. Just prior to her three days of coma a leucocytosis of 14,000 was noted. Differential count was not made. The second case of spontaneous recovery occurred twice in the same patient in the practice of one of our Shelby physicians. Twice he gave this patient up to die and twice his patient recovered by the aid of a "quack" water. From the standpoint of diet and appropriate treatment both of these patients would have made good additions to statistics. Unless the profession makes an earlier diagnosis and obtains more cures a most excellent opportunity is offered to the quack. A number of pellagrins presented themselves to the hookworm dispensaries last year, the first time they were seen by any doctor, and the inevitable followed. Pellagra was cured by thymol.

Again the necessity of finding a uniform factor in the recovery of pellagra presents itself. I regard pellagra as a medical disease which may at times be relieved by surgical interference. As I have mentioned before in this paper, gallbladder drainage with appendectomy is the operation of election and may have twofold effect on the disease. Early in the disease some patients have a slight catarrhal jaundice; as the gallbladder is a very suitable reservoir for many bugs, it is possible the pellagra germ may lurk here. At least drainage of the gallbladder relieves the pancreas and upper bowel, while the mere presence of a drain sets up a leucocytosis over a number of days. Appendicostomy has been performed with success in pellagra, but aside from a continued leucocytosis the drainage is not high enough in the intestinal tract. In the normal man we have three diverticula. Two, the tonsils and appendix, we may remove; the gall ducts we can drain.

Any surgical procedure by me on pellagrins has been attended with success. First, I have put the patient in a way to complete health and second, I have stimulated the hematopoietic organs to such an extent that my patients have escaped one year without a return of pellagra. Three cases relapsed immediately following operation and two others became insane—operated on for cancer of uterus—and relapsed. All are in good health today. They owe their recovery from pellagra to a leucoctysis surgically incited. This fact I shall prove to your satis-

faction by my report of the action of colloids and strong drugs upon pellagra.

E. H. Martin, of Hot Springs, in a recent article on the use of arsacetin has added more evidence to this point. He claims that in the use of arsacetin, you should get a *reaction,* which he claims is due to the destruction of parasites and the releasing of their antibodies, and furthermore, you should administer asacetin as long as you get a *reaction,* because you are killing bugs. I have given about four hundred intravenous injections of metals, metallic colloids electrically prepared, and organic colloids of metals. Chief of these is antimony, copper (*selenium,* Wasserman), silver, arsenic, and iron. The antimony, copper, arsenic, and iron have been used in pellagra; copper and selenium in inoperable cancer; arsenic in syphilis, and iron in tuberculosis, kidney anæmia, etc. The most electrically positive metals such as copper, provoke the greatest disturbance—the socalled reaction. Clinically, this reaction begins shortly after the administration of a colloid. In the electrically prepared metallic colloids after the manner of L. Loeb or G. Bredig in my hands, a chill began forty-five minutes subsequent to administration, accompanied by a rise of temperature to 102 or 104 and a corresponding acceleration of the pulse with headache, nausea, and sometimes emesis. Upon examination of the blood before, during and after this chill, a pronounced leucocytosis is seen to begin, increase and disappear, with the temperature curve. I have been able to produce at will a leucocytosis of 15,000 to 20,000 within forty-five minutes of the administration of the drug. In nine hours the leucocytosis has disappeared. What has become of them? When a reaction is produced daily, a septic chart is imitated, or if every other day, a tertian fever curve will occur. As this reaction curve is in the hands of a man who wields the needle, I have called it an aseptic chill. Twice weekly is as frequently as I have ever used it.

The leucocytes that are *called up* by means of the hypodermic or intravenous *reaction* to strong drugs is unique. When the first reaction is provoked the polymorphonuclear leucocytes are 98 per cent of the entire differential count. This, as you know, exceeds Sondern's leucocytic resistance line which he indicates as a failing resistance. As the use of strong reactions is continued, the small mononuclear leucocyte enters the count in increasing percentage; with still more injections the large mononuclear leucocyte begins to occur more frequently; and if the use of the colloid is continued, large mast and bone marrow cells make their appearance. Finally a decrease in the red cells is noted, a

few irregular red blood cells appear—poikilocytosis. Here I have terminated the use of electrically prepared colloids.

To the cystologist the phenomena within the polymorphonuclear leucocyte is interesting. The chromatin has lost its usual resting shape and is unraveled like a skein of yarn and thrown into loops, ovals, and giant peripheral rings, generally open at one place. The cytoplasm is clear and very translucent. In using the organic colloids of metals, the above reaction may be absent, or if present is never so excessive as that produced by the electrically prepared colloids. Do these increased leucocytes phagocyte? I do not know. I am an ardent follower of Metchnikoff and Wright, but I have no means at hand to prove these cells active clinically. The patients improve in well being, a muddy copper colored skin soon begins to show a healthy flush; there is a gain in weight.

I have reported a case of spontaneous recovery from pellagra with a leucocytosis of unknown origin. I have quoted E. H. Martin's statement, showing the necessity of a reaction to arsacetin as essential to a cure of pellagra. I have shown the effects of colloids and strong drugs upon the blood making apparatus, which becomes a generous leucocytosis created at the will of the doctor and I have reported pellagra recovering from a variety of surgical procedures which were undoubtedly accompanied by a mild surgical leucocytosis. Whether or not a more or less active leucocytosis should be provoked early in pellagra remains for experience to determine. I have shown the way.

All authors agree that pellagra is a disease of hypoleucocytosis, except in the typhoid state, when a low grade leucocytosis exists. The few cases I have seen in this condition were so overwhelmed by their infection that nothing seemed to ease their helpless state. There is one more factor to support the good results obtained in pellagra when a leucocytosis is created early in the disease; this is a negative factor but it obtains. Drugs depressing the blood making apparatus militate against recovery just as effectually as the drugs which stimulate the blood making apparatus act favorably. Alcohol and opium act unfavorably. I have recently read of the favorable action of opium on pellagrins but I have personally seen several pellagrins progress from bad to worse and final dissolution on opiates.

An early diagnosis, careful diet and treatment, as outlined by Wood, Martin, Niles and many other specialists on this disease gives most favorable results. A late diagnosis, then the internist gives the surgeon a chance. On the other hand pellagra is a nonleucocytic disease. Pellagrous infection is symbotic with nonleucocyctic diseases, such as ma-

laria, typhoid, tuberculosis, cancer, pregnancy and the puerperium; or it may follow such leucocytic diseases which have exhausted the blood making organs as pneumonia and septicemia.

In my experience when a leucocytic disease or reaction is grafted upon a pellagrous patient, whether due to the effects of surgery or surgical diseases, or to the beneficent effect of a reaction to strong drugs, or to a spontaneous leucocytosis, pellagrins make a slow but satisfactory recovery from their pellagra. To date none of my patients have relapsed. All have passed one summer and some have passed two summers.

A number of things are to be avoided by the pellagrin. Pellagra is, as I have stated, associated with nonleucocytic diseases, such as pregnancy, lactation, female pelvic disorders, cancer, tuberculosis. Pellagra does not improve, but has a tendency to grow worse, in alcoholics, in morphine habitués, with excessive consumption of corn products, a low protein diet, and from the effects of direct sunlight, while any medical or surgical procedure which tends to restore the individual to the normal is beneficial to the pellagrin. Pellagrous morbidity is greater than the birth rate in the Piedmont section. That the disease may be transmissible is suggested by the number of cases seen in the same house. All, however, may have been subjected to the original infection. Among the children, certainly, some have acquired pellagra after birth. As pregnancy has added to a fatal termination of pellagra, I am not prepared to state the condition of the offspring. However, one would naturally suspect an overwhelming infection would pass the syncytium. Is this heredity or environment? Incidentally in the aborted fetuses of the pellagrin lie many laboratory possibilities of antibodies and antigens. What we need is a specific blood test to enable us to make an early diagnosis in pellagra. This fact is clearly borne out by the report of the Illinois pellagra commission, which found a low protein diet among the insane in that State, though it is a well known fact that a generous protein diet is favorably borne by pellagrins. On the other hand I am surrounded by pellagra, and the inhabitants in all walks of life invariably eat two different proteids at each meal. The proteid is certainly not an etiological factor in pellagra.

Besides the avoidance of those articles of diet that apparently depress the well being of the pellagrin, it certainly should be the duty of the physician to advise the female pellagrin against pregnancy. This is a new role for the physician, but to anyone watching the unimpeded progress of a pellagrous infection accompanied by pregnancy, this advice will be accepted. In two of my own cases in which pregnancy

was terminated to save life, one patient at the third month recovered, while one at the sixth month rallied only to sink deeper in a typhoidal pellagra and death.

An early diagnosis, proper diet and treatment place pellagra entirely in the domain of modern medicine. A specific test, such as the Bordet test, is within reason. To one looking over the thin, scrawny offspring of the pellagrin, it is reasonable to presume the aborted placenta and fetus contain sufficient antigen to set up a specific reaction in vitro. One in twelve pellagrins are surgical and can be treated by drainage. Lastly, an absolutely unfavorable prognosis should never be given to a patient, because the most unfavorable case may make a surprisingly rapid recovery and chiefly because the recovery from pellagra depends upon a happy frame of mind.

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OSTEOMYELITIS.

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Mr. President and Gentlemen of the State Society:

I wish to invite your attention to a brief review of the literature on osteomyelitis and report of a case of the suppurative type.

Osteomyelitis is an inflammation of the medullary canal and the tissues lining the cancellous portion of the bone and may present itself as simple, acute, acute infective, and chronic osteomyelitis. These are clinical varieties and probably all depend upon the action of pyogenic organisms, controlled by the individual resistance of the tissues to the infection.

According to J. C. Stewart, three distinct clinical conditions may be classed under the title of nonsuppurative osteomyelitis.

(1) Cases of ordinary osteomyelitis in which, owing to nonvirulence of the invading germ or to unknown conditions increasing the resistance of the individual, no necrosis is caused. In such cases there is no pus, no sequestrum, but instead, in a certain number, marked irritative reaction is set up and there is a thickened, dense and painful enlargement. These case are quite common, regularly recognized, and properly treated.

(2) Cases of injury, generally clinically fracture, where a small piece of bone is entirely separated and dies, forming about it a closed cavity of dense new bone in which it lies until absorbed, but without suppuration.

(3) This class, to which Stewart calls particular attention, differs entirely from the previous classes by having no notable beginning, but an insidious onset, although in two cases a febrile illness and a slight injury respectively antedated by two years the culmination of the disease by operation. The disease is essentially chronic, but progressive and regularly misdiagnosticated and treated as rheumatism. Cases in this type are not recognized by the textbooks, the nearest approach to them being called "chronic osteoperostitis," which is certainly a misnomer, for the periosteum is regularly normal.

Their characteristics pathologically are the transformation of the marrow cavity into a multicellular labyrinth filled with a tissue which microscopically resembles marrow. There is also a synchronous subperiosteal production of bone which results in a fusiform enlargement, the new bone being spongy and not dense.

They are characterized by insidious onset, so called rheumatic pains, worse in damp weather and at night, with slight evening rise of temperature. While the two cases cited each give histories of an acute causative agent, in neither could this be said to stand in an undoubted etiologic position, as the local symptoms in both cases occurred over two years later. What could ultimately happen to a case of this kind without operation can only be surmised. Neither case showed any apparent change during the several months they were under observation, and it seems probable the bone would merely remain enlarged and painful until stirred up by a fresh injury or infection, when there would be suppuration and a sinus would be formed.

Diagnosis is easy after syphilis is excluded by the noneffect of the iodids. Tuberculous osteomyelitis regularly causes cold abscess and sinus formation, while periosteal sarcoma is generally more rapid and can be eliminated by skiagrams. A fusiform enlargement of a long bone, increasing very slowly, with point pressure tenderness at various places, and slight rise in the afternoon temperature, gives a characteristic picture. The treatment is opening the bone and following the morbid process each way until normal bone is reached, cleansing, drying, and filling the cavity with Moorhof wax for union by first intention.

Acute inflammation of the long bones with especial reference to excision of the diaphysis, is considered by R. G. LeConte, founded on a series of sixty cases.

Etiology: Contusions, wounds, and foreign bodies, 38-63%.

Infection: Staphylococcus aureus, 12; unknown organisms, 4; unknown causes, 4; more than one cause, 8.

Age: Before the fifth year, 8-13%; between the fifth and thirteenth years, 50-83%; after the thirteenth year, 2-3⅓%.

Sex: Male, 54%; female, 6-10%.

Bones involved: Tibia, 47-73.5% fibula, 6-9.4%; humerus, 6-9.4%; femur, 3-4.7%; ulna, 1-1.6%; clavicle, 1-1.6%; more than one bone involved, 4%.

The frequency in males, the time of life when the disease is most common, and the bones involved, all point to an injury as the predisposing cause. That in practically 75 per cent of the cases the tibia was involved must be due to the large surface it presents covered by skin alone, and the frequency with which young males bump their shins.

Reviewing the cases as a whole, LeConte believes the following conclusions can be fairly drawn:

(1) The mortality and extent of the necrosis following acute inflammation of the bone depends not only upon prompt intervention, but also upon its thoroughness.

(2) Suppuration beneath the periosteum does not exclude an infection of the medulla, the presumption being that after three days this is also involved.

(3) Within seventy-two hours of the onset, osteoperiostitis is localized usually in the cortex; an incision, disinfection and drainage are sufficient to bring about a cure. If there is no marked diminution of the symptoms in twenty-four hours after incision and drainage, the medullary cavity should be opened.

(4) When the cavity is opened and found healthy, the dangers from infecting it are slight.

(5) In the majority of these cases osteomyelitis was due to a neglected osteoperiostitis.

(6) In operations after the third day, where systemic symptoms are pronounced, the medullary cavity should always be opened and the opening be sufficiently long to expose healthy marrow, and sufficiently broad and long to expose healthy bone.

(7) The mortality of 10 per cent was directly due to delay in operation, and to inefficient primary operation. In five cases the surgery was at fault, and had a radical operation been done, LeConte believes all would have recovered. In the sixth case, the delay was perhaps more responsible than the surgery for its fatal termination. It is but fair to say that in collecting these sixty cases, perhaps forty more were rejected for various reasons, none of whom died, so a mortality of 6 per cent is nearer the truth.

Lastly, the surgery was bad, very bad in a number of cases, and the tendency to wait after giving drainage, to his mind, was not sound. He firmly believes that the attempt should be made in the acute stage to remove at the primary operation all diseased bone. We know the periosteum in the acute stage will reproduce all bony defects, and delay means a greater number of operations, greater destruction of bone, greater likelihood of epiphyseal inflammation, longer convalescence, and perhaps higher mortality. Twenty years ago we were satisfied in appendicitis with opening and draining a large abscess. Today we say some one has blundered when we receive a case in the abscess stage. LeConte feels the necessity of resecting twelve shafts in sixty cases (20 per cent) is an error of this same sort, for if efficient surgery had been done early, the condition would not have arisen for such an extensive operation. As Nichols has pointed out, the resection of a whole shaft is but little less shocking than an amputation, and the operation has a very definite danger from hemorrhage, and in a few cases, on account of the hemorrhage, it has had to be done in two stages. LeConte's plea, therefore, is for an early diagnosis and, to continue the simile of the appendix, to abolish the Ochsner treatment of delay and to treat acute inflammation of bones as we would a similar condition in the soft parts, *e. g.,* carbuncle, by radical excisions at the primary operation.

Under the head of acute infective osteomyelitis, I wish to refer to the acute diffuse and acute epiphysitis.

Acute diffuse osteomyelitis, a diffuse inflammation of bone and marrow, is due to infection with pyogenic organisms (staphylococcus pyogenes aureus and streptococcus pyogenes), or to mixed infection of the pyogenic organisms with the organisms of typhoid fever, of tubercle, etc. It may arise from a wound, such as a compound fracture, a gunshot injury, or an amputation. It may occur when the infection has been by way of the blood. The causative organisms may enter the circulation through the lymphatic system or may pass directly into the blood from a focus of suppuration in the skin, in the subcutaneous structures, or some deeper part. The organisms may have been taken into the system by the tonsil or respiratory organs (Kraske), the intestinal canal (Kocher), the genitourinary tract, or from excorations, bruises, or small wounds in the skin (Warren). The exanthemata strongly predispose to osteomyelitis. Typhoid fever, typhus fever, smallpox, and malarial fever, lessen the vital resistance of marrow. Some observers teach that the typhoid bacillus is pyogenic (Frankel), but others think that the toxins of the typhoid organisms weaken the marrow and suppuration arises because of mixed infection with pyogenic bacteria

(Park and Klemm). Keen insists that the typhoid bacillus has occasionally pyogenic power. In osteomyelitis from wound of the endosteum the medulla and cancellous tissue inflame and suppurate. The entire length and thickness of the shaft may be involved, and the periosteum becomes infiltrated, detached, and retracted from the edges of the wound. The soft tissues around the bone also inflame and sometimes slough. More or less necrosis is inevitable.

The symptoms of acute diffuse osteomyelitis from wound are a very severe boring, gnawing, aching pain; great tenderness, deep swelling of the soft parts over the bone; the skin is healthy early in the case; a profuse offensive purulent discharge containing bone fragments and tissue sloughs is poured out; the periosteum is red, thick, and separated; a fungating foul mass protrudes from the medullary canal; rigors, sweats, and fever point to septicemia or pyemia.

Treatment: In treating acute diffuse osteomyelitis expose the interior of the bone, curette the medullary cavity, swab it out with pure carbolic acid, and pack it with iodoform gauze; drain; apply antiseptic dressings; frequently cleanse; and use strong supporting treatment. When the sequestrum loosens, it should be removed. Some cases require amputation.

Acute Epiphysitis—Acute osteomyelitis without a wound is called "acute infantile arthritis" or "acute epiphysitis." It affects the young, especially children from one to two years of age, but occasionally arises in older persons (ten to fourteen years). It begins at the epiphyseal line. A strain may occur at this point, inflammation follows, and a hospitable welcome is extended to microörganisms which are contained in the body fluids and which pass through this area. In some cases chilling of the body is the predisposing cause. In some patients no history of injury is obtainable; a preceding illness, especially a specific fever, being responsible for the weakening of the tissue resistance. New tissues are always more susceptible to infection than old tissues, and one of the most susceptible to infection is the young bone at the end of the diaphysis. Septic organisms may lodge in this area, multiply there and produce systemic poisons. The femur and tibia are the bones most often attacked, the hip joint or knee joint being secondarily involved; the humerus, tibia, radius, ulna, and other bones may be attacked; the shoulder, ankle, or elbow joint may become secondarily involved. The youngest bone around the ossific centre first inflames, necrosis takes place, a small sequestrum forms, and the pus around the sequestrum is apt to make a cloaca and empty into the adjacent joint, setting up a suppura-

tive inflammation of the articulation, and into the medullary canal, causing diffuse osteomyelitis.

The symptoms of acute epiphysitis usually come on suddenly and especially at night, and the attack may be so acute as to cause death by systemic poisoning before a diagnosis is arrived at. The disease is generally ushered in by a chill, which is followed by septic febrile temperature. The history will sometimes contain the statement that the patient was suddenly chilled after being overheated (sitting in a draft or in a cellar on a hot day, possibly by swimming when very warm, etc.). There is violent, burning, aching pain in the bone and great tenderness near the joint; the soft parts, which at first are healthy in appearance, after a time discolor, swell, and present distended veins; the neighboring joint swells and may become filled with pus; the periosteum and the shaft are involved for a considerable distance, each epiphysis may become affected, the shaft between being comparatively uninvolved and the epiphyses may separate, displacement and shortening taking place. This disease is often mistaken for rheumatism because of the joint swelling, occasionally for typhoid fever because of the fever, and in some cases for erysipelas because of the redness of the skin. It gives a very grave prognosis. Sometimes an epiphysitis shows milder symptoms and is slower in progress (subacute). These cases are very often mistaken for rheumatism, but in rheumatism the joint is the part involved from the beginning, while in epiphysitis the joint is involved secondarily after obvious evidence of inflammation well clear of the articulation. Further, the symptoms of rheumatism can be rapidly improved by the use of the alkalis or the salicylates.

Treatment: In treating acute epiphysitis do not wait for fluctuation, but incise at once. Break through the bone at one or more points with a gouge or chisel; curette; chisel away the diseased bone, and if necessary curette the medullary canal; irrigate with corrosive sublimate solution; swab out with pure carbolic acid; use iodoform plentifully; pack; drain the joint if it is involved; employ rest, anodynes, and strong supporting treatment; remove dead bone subsequently when it becomes loose; amputation may be required.

Chronic osteomyelitis is usually linked with osteitis. It may eventuate in osteosclerosis, with filling up of the medullary canal, or in limited suppuration, or in caseation of the cancellous tissue (Brodie's abscess), or in necrosis. A tubercular inflammation is one form of chronic osteomyelitis. Syphilis, typhoid fever, etc., may cause it.

References:

Practical Medicine Series, Volume II, 1912, Murphy.
Modern Surgery, DaCosta.

Memorial Exercises

COMMITTEE ON OBITUARIES*

Mr. President and Gentlemen:

Your Committee on Obituaries submit to you the following list of the deceased among the medical profession, with much humility and profound regret:

DR. FRANCIS DUFFY, of Craven
DR. ERNEST WHITCOMB, of Cherokee
DR. J. G. WALDROP, of Henderson
DR. C. L. TAYLOR, of Greenville
DR. WILLIAM SELF, of Jackson
DR. WILLIAM RIDDICK, of Perquimans
DR. W. G. RAY, of Cumberland
DR. GEORGE R. PATRICK, of Gaston
DR. R. A. MOORE, of Durham
DR. G. F. LUCAS, of Pender
DR. J. R. LATTIMER, of Gaston
DR. B. B. LANCASTER, of Polk
DR. JOSEPH G. KING, of Warren
DR. W. S. GURLEY, of Bertie
DR. R. J. GRIMES, of Pitt
DR. I. H. FOUST, of Rowan
DR. W. P. EXUM, of Wayne
DR. A. J. ELLIS, of Northampton
DR. WILLIAM AUSTIN, of Yancey
DR. W. P. IVEY, of Caldwell
DR. J. C. PATRICK, of Cleveland
DR. R. M. NORMENT, of Robeson
DR. L. M. ARCHEY, of Cabarrus
DR. F. T. MERIWETHER, of Buncombe
DR. G. J. ROBINSON, of Johnston
DR. E. N. BOOKER, of Johnston
DR. E. M. HALL, of Durham
DR. T. R. HATCHER, of Duplin

Respectfully submitted,

DR. E. G. MOORE,
DR. A. W. KNOX,
DR. M. L. STEVENS,
Obituary Committee.

*Report presented at Wednesday night's session.

REPORT OF OBITUARY COMMITTEE.

Dr. E. G. Moore, Elm City:

Gentlemen of the North Carolina Medical Society:

As chairman of the Committee on Obituaries I wish to express my thanks to Drs. Knox and Stevens for the assistance which they have rendered the committee and also to express my appreciation to other members of the Society for their valuable support and contributed data and material for this report, and I regret that we have been unable from any source to get any data in reference to some of these deaths, save the fact of their death.

Mr. President, I have quite a number of sketches, and if it is the pleasure of this Society I would like to turn them over to the Secretary, as we have them formulated, without reading each of them, and extend to any member of the Society the privilege of making such remarks or comparing notes upon any individual desired.

Motion to adopt the report by Dr. Croom. Motion carried and obituaries turned over to Secretary for publication.

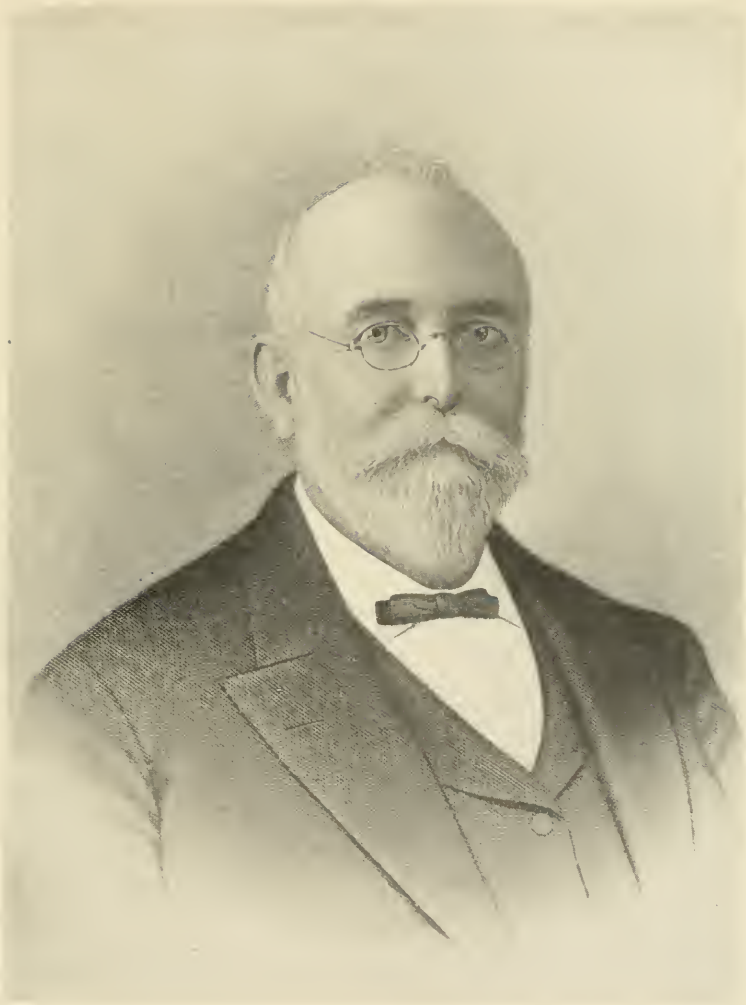
DR. FRANCIS DUFFY.

I confess a pardonable pride in the common sturdiness of North Carolinians and in the many notable men reared in the Tidewater region of the State.

The late Dr. Bagby, of Richmond, Virginia, whom the older of us may remember for his leaning to literature and humor in his day, sought in one of his inimitable lectures to prove that a man was a great man in proportion to his consumption of field peas. He declared that Virginia bred and reared the greatest men of any State in the Union, and that the greatest of the Virginians were reared in the Tidewater region, which region, said he, was the peculiar and abundant home of the field pea. If you were wise enough to identify concomitance with causation, the proof of his contention was irresistible. The field pea is rankly indigenous to our coastal plain also, and I have no purpose to detract from its value either in the production of men or the enrichment of lands. On surer grounds, however, I prefer to declare that North Carolina rears the most useful and nearly perfect type of man of any State in the Union, and to cite for cause the strong ancestral stock and habits of our people. The English, Scotch, German, and Irish settlers in North Carolina were peculiarly apt, steady, and dependable folks.

In the year 1833 Dr. Charles Duffy, one of several doctors in his family, a young man then twenty-five years of age, came from the north of Ireland and settled in the county of Onslow, where he immediately engaged in the practice of medicine. This young Irish doctor, trained in the schools of Dublin, was my family's physician. He was a unique and charming personality, a man of great bodily and mental vigor, a physician of great learning, and a citizen of public spirit, of high ideals of public and private life. For more than three score years he continued a graceful life of service in one broad community; and, passing away beyond his fourth score, he left the heritage of a deep and helpful impress upon the minds and hearts of all who knew him.

In 1837 Dr. Charles Duffy married Miss Nancy C. House, of Richlands, a veritable helpmeet to him, and with her he established an ideal country home near Catharine Lake. Their marriage was blessed with twelve children; two sons died in infancy, but five sons and five daughters lived to maturity. The daughters possessed the beauty and charm that might have been expected of Irish ancestry and Southern birth and rearing. The sons were all strong men, such sons as bring gladness to the heart of a father. Three of them, following hereditary bias (for the Duffys were a family of doctors) took to the profession of medicine,



Francis Duffy

one to agriculture and business pursuits, and one chose the law for his jealous mistress.

Dr. Francis Duffy, the subject of these remarks and the third son of this marriage, was born in Onslow, June 24, 1847, and died in New Bern, November 5, 1912. In 1903 he married Miss Lida Patterson. To them three children were born, who, with Mrs. Duffy, survive him.

In this brief span of life Dr. Duffy ran the gamut common to many fine human instruments. The chaos and poverty incident to the war and the years following it left him little but paternal land and inborn courage. Taught in the household industry, diligence, perseverance and abiding self-respect, he learned to endure hardships, to struggle, to overcome difficulties. Good ancestry and stress of times are fine ingredients for the making of men. He was deprived of the opportunities that came unsought to younger men. But serious minded always and with young eyes above the treetops, he felt the need of an education as an indispensable equipment for high and useful living. Without the help of schools, amid whatever difficulties beset him, he applied himself to books. You would never have dreamed that he was not a collegebred man, this man so full of culture in his mature years. He labored as a lad with his own hands from morn till noon and from noon till night. His noon hours and his evenings he spent with his books as a higher and better sort of work. And once a week he went five miles to be quizzed and instructed by a competent teacher. Under such difficulties Francis Duffy laid the foundation of his education, which he added to studiously with the passing years. For "through desire a man, having separated himself, seeketh and intermeddleth with all wisdom."

He read medicine under his father and his elder brother, Charles, and then went for the furtherance of his education to the Medical Department of the University of Virginia. There he was graduated with distinction in 1868. I recall now that when I went myself to the University, in 1876, Prof. John Staige Davis asked me what part of North Carolina I came from. When I replied, "From the eastern part, Onslow County," his face lighted with a smile as he said, "Then you may know my friend, Francis Duffy—that was his county." When I had told him that our families were friends and not very distant neighbors, he said to me, "Francis Duffy was one of the best and brightest men that ever attended the University."

Dr. Duffy practiced medicine in his native county for a year or two, and then went to New Bern, where his brother Charles had preceded him, and there he spent the remainder of his days. He served on the Board of Medical Examiners from 1884 to 1890, and he was President

of this Society in 1898. As physician and man he led, always among the foremost.

Exceedingly quiet of demeanor and of easy dignity, he was a man of infinite humor. No man enjoyed better than he the hearing and the telling of a good story. Some of you will recall his relation of an incident between his always serious and grave faced brother, Dr. Charles, and the late Dr. O'Hagan, another remarkable Irishman. It is a wartime story when both were surgeons in the army. Shirt collars were scarce and correspondingly prized by a gentleman during the war. Dr. Charles missed one of his collars, searched and inquired for it, and gave it up for lost. But talking one day with his friend, he was rejoiced to read his own name on the back of the collar O'Hagan was wearing. For sake of economy the collar had been turned inside out. He reproached Dr. O'Hagan at once for the appropriation of his collar. "Charles, I am mortified and astonished at you," said O'Hagan. "Is it come to pass that a man cannot in a time like this name one of his few collars after his dearest friend without being accused of stealing?" And he was fond of the incident of the Irish alderman who would consent to the putting of gondolas upon the lake in the park, but objected to the extravagance of buying twelve, preferring to buy only two—one male and one female, putting them on the lake and leaving nature to take her course.

For his intrinsic worth, the manhood in him, Frank Duffy always commanded my admiration. He was preëminently "a man with the heart of a man in him." Returning from the University, his debts all paid, he had left in money only twenty-five cents. The times were not favorable then as they are now. The clouds of war were hardly gone and the scars of hell were visible everywhere. With high courage and confidence in himself he fronted to the East and laughed in the face of illfortune. He threw his last quarter into the lap of a sister, and smiling said, "You may have that, and I will begin life with nothing." But a man of his type needs no money to begin life with. A man of his type, though penniless, begins life with a priceless fortune of convertible assets; and what the world terms success is only a certain after event to him. He had brains and character and courage in rare measure, and whoso possesses these never begs, but by divine right unlocks some rich door of the world's treasurehouse.

By his own steady purpose and untiring energy, his remarkable common sense and incorruptible integrity, he amassed, enjoyed simply without ostentation, and left to his family a not inconsiderable fortune of two hundred and fifty thousand dollars. Not everything that he

touched turned to gold; but value attached to whatever he considered valuable. His judgment of conditions and his sense of values were everywhere so unerring and patent that his advice was confidently sought in business and safely acted upon by his friends and acquaintances. It was always worth while to know what Frank Duffy thought about a matter. A man not only of scope but of telescope also, of wonderfully comprehensive and logical mind, of unvarnished and untarnished integrity, in manliness of character and greatness of mind he was not less than the greatest who has graced this Society with his membership.

A sad commentary upon the lives of average men is the old Latin maxim, *Nil nisi bonum de mortuis.* It is a maxim with which I have not much patience. I should have respected the Romans rather if they had commanded us simply to say nothing of the dead. When silence is golden charity toward either the quick or the dead, let us keep silent. But if we must speak either of the living or of the dead, let us speak only what is true. And especially so of those whose lips the sallow hand has sealed against refutation alike of foul flatteries and contumelious lies.

Concerning my friend who is gone, I speak frankly as I knew him. There is no charitable bar to my utterance of the simple truth about him. For I know no truth that could be said of him dead that would have shamed him living, and his life was such that, while living, no falsehood could have been said to his hurt. For this generation that knew him, it matters not what epitaph marks his grave; he professed no virtue which he did not exemplify in his daily walk and conversation among men. I knew that he was a Christian gentleman long before I knew of his continued affiliation with the Baptist Church from early manhood. Not that he was sanctimonious; no man was farther from that miserable taint. On the contrary, he was a round faced man, blue eyed, jovial, and good—an unaffected, upright man, whose hope, as of the righteous, was perennial gladness. He was great, but he was an humble man withal. The only pride he knew was the natural expression of a profound and genial self-respect. The lowliest were at ease in his presence, and he was unabashed in the presence of the great.

In social and domestic relations he exemplified the tenderness of women. He loved his own children with the fondness of a mother; and he loved sincerely all children, no matter whose or how humble they were. In his relations with men, no man ever suspected him of insincerity. He was a virile, loving soul, simple minded in that he was without duplicity, a kind hearted wise man without guile. As a physician he exemplified the same gentleness, the same sincerity, the same fullness

of knowledge and calmness of wisdom. His presence was the assurance of all possible better things.

He was honest minded, honest with everybody and not less so with himself. He felt that he himself was as worthy of consideration and satisfaction as anybody else. When he had satisfied himself that he was right, he went ahead with boldness and without fear. But he never jumped to conclusions; he went to them by patient, laborious, honest paths. And so coming to trust himself, he was preëminently worthy to be trusted by others. There was no more careful diagnostician than he, and there was no more faithful and successful practitioner of the science and art of modern medicine. A reliable man he was in every relation of life; and that rarer thing also, a safe physician.

We shall miss a man like this. But let us not grieve at his going; for "Light is sown for the righteous, and gladness for the upright in heart."

CYRUS THOMPSON.

DR. G. T. SIKES: I do not rise to make a speech after hearing Dr. Thompson, but being well acquainted with a number of the names that we have heard read in our presence tonight, I can not satisfy myself to sit quiet and not recall a few incidents of some of them. A number of them were friends of mine, two of them especially—Dr. L. C. Taylor from my own home, and Dr. W. P. Ivey. I can not resist the opportunity to make just a few remarks about W. P. Ivey. We were schoolboys together, graduated from the same literary college and graduated from the same medical college. I want to say tonight with reference to Dr. Ivey that in all of my acquaintance I have known no man more manly, more genteel or more refined than was he. He was as true as steel. He was as honest as honesty itself, as gentle as perhaps the average woman. As a young man, as a schoolboy, he commanded the respect and love of those who knew him, and that acquaintance ripened into affection that went with me hand in hand until I saw in the newspaper that W. P. Ivey had gone hence. It struck me, as such things often do, with a pang of sorrow, and reminds us that the best of us have to go. But it does not efface from my memory the fond recollection of his noble character, the strong friendship, the kindly and humane life of W. P. Ivey.

DR. FRANK TRYON MERIWETHER.

Dr. Frank Tryon Meriwether, one of the State's most prominent and successful surgeons, died June 12th at the beautiful hospital which

bears his name and which stands as a monument to his skill and success. Perhaps never has the death of an Asheville citizen caused as much and as universal regret as the passing of Dr. Meriwether, whose labors in behalf of suffering mankind, whose big heart and kindly disposition and infectious optimism had won for him the admiration of the people of Asheville both in and out of his professon. Truly was it said of him that "He was not a little man, but a great, broad, tolerant spirit into whose soul the iron never entered. Nor was the dollar his god. Those who knew him best and were familiar with the inner details of his life know that no poverty stricken patient ever appealed to Dr. Meriwether in vain. The poor always received from him that skillful attention that saved the lives of the rich."

Dr. Meriwether was born in Louisville, Kentucky, and graduated at the University of Louisville with high honor. After graduating he came to Asheville in 1886. Later he served five years as Assistant Surgeon in the United States Army. After his return to Asheville he soon won for himself an enviable reputation as a surgeon and was connected with the Clarence Barker Hospital and the Asheville Hospital. Five years ago he founded the Meriwether Hospital, the capacity of which soon had to be doubled in order to accommodate the many who came to him from north, south, east and west to take advantage of his unusual surgical skill. This institution, which is one of the most modern and most complete private surgical hospitals in the land, will stand a fitting monument to his life and to the character of his work.

He was a student from first to last, and he made it a practice to go to some one of the medical centers every year to do postgraduate work or to familiarize himself with the methods of other leading surgeons. He possessed one of the most valuable medical libraries in the South and was familiar with it. Dr. Meriwether was a member of the local and State medical societies and of many national associations. He was one of the founders of the American Gynecological Society and one of the directors of that organization.

He was a distinguished Mason, having been Past Master of Mt. Hermon Lodge, No. 118; Past High Priest of the Asheville Chapter, No. 5; Past Commander Cyrene Knights Templars; member of Oasis Temple A. A. O. N. M. S.; Past Venerable Master, Asheville Lodge of Perfection; and Deputy of the Sovereign Grand Inspector General for North Carolina of the Ancient and Accepted Scottish Rite Masons. He was also a member of the Eastern Star. The fact that he was one of the few men in the State upon whom the thirty-third Scottish rite degree has been conferred is in itself a sufficient eulogy of his life and

character. In addition to these honors as a Mason, he was also a member of the Knights of Pythias; the I. O. O. F.; the B. P. O. Elks; and the Jr. O. U. A. M.

As a companion he was a man; as a friend the truest of the true; as a surgeon most skillful, yet conservative; as kind and sympathetic as a woman, yet bold and courageous when the exigencies of his profession called for a display of these qualities. Although only forty-nine years of age, he had accomplished a great man's work.

C. P. Ambler,
C. S. Jordan,
M. L. Stevens,
Obituary Committee Buncombe County Medical Society.

DR. GEORGE JOHN ROBINSON.

On the thirtieth day of March, 1910, as the shades of night were approaching, as the vibrant sounds and discordant noises of the day were dying, giving place to the peace of early twilight, the spirit of Dr. George John Robinson took its flight to the God who gave it. He fell on sleep, in deed and in truth peacefully, yet with the suddenness that so often follows a long illness. He had been in ill health for about three years and confined to his room for several months. The last the writer saw of him prior to the moment of his death was about one o'clock of the afternoon of his death, when he was found sitting on the side of his bed enjoying his midday meal. In a short while after my visit he lay down and went to sleep, from which he awoke in another world.

Dr. Robinson was born in County Antrim, Ireland, January, 6, 1846. He was brought to this country in infancy by his parents, John and Margaret Robinson. His father was Professor of Pedagogy in the University of Dublin. After moving to this State he continued his chosen profession and being a ripe scholar was instrumental in educating the young manhood of the eastern section of the State and especially Goldsboro, where was his home. Dr. Robinson read medicine under the late Dr. Thomas Hill of Goldsboro and later took his first course in medicine at Jefferson Medical College just prior to the Civil War. After the beginning of hostilities, his father being an ardent Unionist, young Robinson entered the Union Navy as Surgeon Steward in the North Atlantic Blockading Squadron at the age of nineteen. At the close of the war he served as Clerk of Court of Wayne County, North Carolina, but loathing politics and especially the negro element in his party at that time, and moreover being desirous of completing his course

and entering his life work, he reëntered Jefferson Medical College. While Clerk of Court he was married to Miss Kate Nixon, of Goldsboro. After graduation he located at Princeton, Johnston County, and formed a partnership with Dr. James Hay, a graduate of the University of Glasgow, Scotland. These kindred spirits of the "Emerald Isle" were permitted to associate in practice but a short while owing to the death of Dr. Hay; whereupon Dr. Robinson moved to Smithfield, where he spent almost thirty years in active practice. On August 30, 1893, Dr. Robinson was married to Miss Lizzie N. Hyman, of Williamston, North Carolina, and in March, 1895, he was again bereaved of his wife.

Dr. Robinson's death removed from his community a striking personality. By nature quick and impulsive, he was likewise generous and forgiving, ever ready to acknowledge a fault or condone an error. Bright, jovial, and a good fellow he enjoyed the company of the young always and in return retained their friendship. If taken to task for his youthful propensity he would reply, "Well, I'm as young as I ever was if I don't look it." Naturally, then, he was the friend of the young physician and liberally assisted them whenever within his power. He was proud of his profession and gloried in its purpose, progress, and achievement. He was sincere, ethical, and courteous toward his professional brother. His patients had for him a peculiar affection, overlooking his faults and praising his virtues; and for them he could not do too much, often giving his services and lavishing delicacies upon those he knew unable to requite. He possessed a retentive memory and had a storehouse of knowledge and information. Dr. Robinson was especially familiar with materia medica, and therein it was the deliberate estimate of his confreres that no one in his section of the State was his superior if indeed his peer. An omniverous reader of medical literature he kept his well assorted library supplied with the best. His reading was not confined to medical literature; his familiarity with Burns' works especially and his fund of Irish wit was ever a source of mirth to his auditors, and likewise his anecdotes afforded intense amusement to any company in which he was thrown.

In point of service he was the oldest practitioner in his community, and his wise counsel was often sought by his professional brethren. Energetic in his efforts to uplift his profession, he was President of the county society in the eighties and later largely instrumental in its reorganization and again its first President. He was an Honorary Fellow of the State Medical Society, elected at the Asheville (1909) meeting, though never recorded. He joined the State Medical Society the same year he was licensed, 1884.

Dr. Robinson was an ardent Catholic and died in the full enjoyment of all the consolations of his religion. His remains, accompanied by his sorrowing family and a large number of friends from Smithfield, were taken to Goldsboro. The funeral was held from St. Mary's Catholic Church and the interment in Willowdale Cemetery beside his first wife, the mother of his only surviving child, Mrs. Thomas S. Ragsdale, of Smithfield. He is survived by two brothers, Judge W. S. O'B. Robinson and Col. Joseph E. Robinson, of Goldsboro, and three sisters, Mrs. Margaret Cox, Miss Eliza D. Robinson, and Mrs. Mary R. Morris.

There has passed from our midst, in the words of his home paper, "a man who enjoyed an enviable reputation as a physician of ability and high professional ethics, a student at all times for the love of his profession and who kept abreast of it for the good he could better do for his fellow man. To know him was to love him for he was the soul of unselfishness and was absolutely without guile as he was without fear."

L. D. Wharton.

DR. W. P. IVEY.

With a few simple words I wish to pay my tribute of respect to the life and memory of my dead friend, Dr. W. P. Ivey. Many of you who knew him will give willing testimony to his noble character and his worthy virtues, and those of you who did not may believe me that I do not speak falsely of him whom I knew so well, and whose intimate associations are pregnant with the hallowed memories of youthful days.

More than thirty years ago I recall him, fresh from classic college walls, where as a student he won honorable distinction, and sustained, not only with the faculty but the general student body as well, an enviable reputation as a young man of high ideals and sterling character.

Struggling with poverty and with no one to aid him, he taught school for a term of years, as a means to an end, to provide himself with the necessity of support, and by frugal living to save a sufficient amount to pay the expenses incurred in attending medical lectures.

I have always counted myself fortunate that I met with him on our matriculation day and that I was permitted to become his companion in bed and board and lecture hall for the two years that followed. From that hour we were friends and companions and not the slightest jar or discord or unpleasantness of any kind ever arose between us, due, I must acknowledge, to his gentle and pleasing temperamental qualities and my profound esteem for the excellency of his high moral character

and my sincere appreciation of his well poised and resplendent gifts of mind.

It could but excite the admiration of his fellow students to see him always promptly at his seat in the lecture room, watchful of every clinic and present at every lecture, seeing and listening with never a notebook to make a record or sustain his memory, and yet never failing to answer correctly such oral examinations as he was subjected to at frequent intervals during the term. His training and experience in the schoolroom had fitted him with this mental discipline which easily gained for him the distinction of mental superiority among his class. He knew things with a scientific precision and retained them with a vivid and marvelous memory.

High public honors might have come to him if he had indulged in methods politic or sought the preferment so often accorded others with greater boldness of spirit but less of reticence and refined culture. By his very nature he was shrinking and perhaps even timid, heroic in the self-denial and resolute in his purpose to ask no position and seek no honors with a view to his own personal gain. Whatever of distinction came to him as a member of this Society, came as an appreciation through his friends, and very often without his knowledge.

When almost unknown to this Society I asked the Nominating Committee to make him Essayist, which they kindly did, and his essay which followed, on "The Chronometry of Life," was one that established his reputation as a thinker and a writer, and which any member may read with both pleasure and profit.

As a physician he was a faithful representative and a true disciple. Wise in counsel, gentle in manner and tender in sympathy, he gained an affection among his clientele that no opposition could brook and no strategy or force could overcome. Far across the hills and down the mountain path he often wended his way to some lonely cabin home, with no companion save his faithful horse and with no guide but the dim light of his lantern, that he might relieve a physical distress or dissipate a mental sorrow. He gave of his strength that others might be comforted, and with an earnest endeavor to do the right he fell a victim to the despotism of duty and became an uncrowned martyr of professional sacrifice. A few months prior to his death an accident befell him, with his horse, and he sustained an injury that culminated in his death on June 28, 1912. It was a tragic ending of a true and faithful physician, and it was a great shock to the sorrowing hosts of friends and relatives who laid his body away to rest.

His simple life was the incarnation of a noble soul, and a living, force-

ful example of the virtuous tribute of esteem with which he was held while living, and with which he was honored when dead. He lived not in vain, for along his pathway he shed the light of a virtuous life, scattered the fragrant flowers of charity, and told the sweet and often repeated story of righteousness. He died not in vain, for such a life can not die, and through all the ebb and flow of tide and years the sweet influence of a noble, virtuous life will be eternal and live forevermore.

We miss his genial presence at this annual meeting. He has gone to his everlasting reward. I sorrow with his bereaved wife and children who will so sadly miss him, but rejoice that he so lived and loved that his reward is now the life triumphant.

"Light be the sod that rests upon his breast,
Green be the grass that grows upon his grave,
Eternal be the laurels that flourish 'round his tomb."

EDWIN G. MOORE.

DR. J. G. WALDROP.

Henderson County recently sustained a great loss in the death of Dr. J. G. Waldrop. It is regretted that more details are not at hand concerning this most estimable man. Practicing as he did for a great many years in Hendersonville, his death has bereaved a very large number of people.

Dr. Waldrop was a pioneer physician, and the hardships which he endured in ministering to the people of the mountainous country is now a thing wellnigh of the past. Dr. Waldrop did one thing which should make his memory eternal in our beloved State. To him, and to him alone, is due the credit of the law which makes it possible for every poor person to get the benefits of free antitoxin for diphtheria—a single service which has already saved the lives of a very large number of sufferers from this dread disease. L. B. MORSE.

Dr. J. G. Waldrop, one of the best known physicians in Henderson County, died at his home in Hendersonville February 28, 1913. His death was not unexpected, as he had for some time been critically ill. He was born in Polk County June 11, 1847. He moved to Hendersonville when a boy and lived there during the remainder of his life. On March 22, 1881, he was married to Miss Nannie Carpenter, of Polk County, who, with eleven children of their happy union, now survive him. He attended college in Charleston and received his medical education in Baltimore and New York City.

Dr. Waldrop was an earnest and valued member of the Methodist church and for a number of years was chairman of its board of stewards, was superintendent of its Sunday school twenty-three years, and chairman of the school board about fifteen years. He was local surgeon for the Southern Railway and held the offices of coroner and county physician for several years.

He was one of the oldest physicians in Henderson County, and the forty years of his practice were filled with deeds of kindness. His home life was beautiful in its simplicity and he was a kind and devoted husband and loving father. He was interested in all that tended to promote the interest of his town and county, and his place in both will be hard to fill.

The many beautiful floral tributes sent to his funeral by sorrowing friends were fit symbols of the esteem and affection in which he was held by the community where he had spent his life in useful service and kindly deeds.

T. C. Quickel, M.D.

GEORGE REESE PATRICK, M.D.

In York County, South Carolina, on August 30, 1855, George Reese Patrick was born. At his home near Gastonia, North Carolina, on June 19, 1912, he died, apoplexy being the immediate cause of his death. He was the third son of J. C. and M. L. Patrick, who were of a long line of most estimable Scotch-Irish ancestry. When a lad of twelve years he was very seriously injured by a runaway horse and for some time his life was despaired of. Not being able to do manual work he early entered Bethel Academy, York County, which academy was at that time perhaps the best institution of learning within many miles of him. He rapidly advanced in his studies and gave such promise that he was allowed to continue in school, and after completing his studies at Bethel he read medicine with that able pioneer physician and excellent gentleman, Dr. Andrew P. Campbell, of York County.

In the autumn of 1877 he entered the University of Maryland Medical School at Baltimore and graduated there in the spring of 1879. He came home and located in Gaston County, North Carolina, at the place at which he died and from which place he practiced his profession until death.

In December, 1881, he was happily married to Mary J. Riddle, daughter of J. B. F. and A. C. Riddle, of York County, who still survives with a family of five girls and four boys, the elder boy, George, now being a student at his father's Alma Mater. While on his way home in his

buggy one evening he had a fatal cerebral hemorrhage and died a few hours later.

Dr. Patrick was one of the few country physicians who kept fully up with the most modern advances in medicine and surgery and was always on the alert for the best to be had in his profession. He was an untiring worker, no night ever being too cold or too disagreeable for him.

In 1904, when Gaston County Medical Society was organized, he joined and was always a loyal and valued member. No physician in his county was more respected by his fellows than was Dr. Patrick, and no man commanded more respect from the laity. Both physically and mentally he was the peer of any in the profession in his county. Rigidly temperate in his habits, firm in his convictions, he yet was always charitable to a fault or to the weak and erring. He was intensely devoted to his most excellent family and with them dispensed the most sincere hospitality, no home offering more warmth of welcome than his. It was the good fortune of the writer to begin the practice of medicine with this able man and he feels a debt of gratitude for counsel from his deceased friend.

In his death the profession has lost one of its ablest men, his neighborhood has lost its leading citizen, and his family has loost a sincere and loving husband and father. L. N. Glenn, M.D.

Dr. George Reese Patrick died June 18, 1912, from Bright's disease. He was born in York County, South Carolina, August 30, 1855; located near Union Church in Gaston County, North Carolina, and continued his work there until his death. He married Miss Mary Riddle in 1881. Nine children were born to them, all of whom survive. He joined the State Medical Society in 1904 and continued active until his death. He was President of the Gaston County Medical Society in 1910. His practice was rural and his work carried him long distances over country roads.

He was a man full of human kindness for his fellows. Wherever he went he carried hope and good cheer and the spirit of the Great Physician. Truly a great and good man has gone to his reward.

T. C. Quickel, M.D.

DR. ROBERT A. MOORE.

Dr. R. A. Moore died in Durham, North Carolina, February 18, 1913. Dr. Moore was a native of Orange County and received his early education from the neighboring schools. He received his medical degree

from the University of Maryland in 1891. The greater part of his professional life was spent in Durham, where he enjoyed a large practice. He was a general practitioner and was greatly loved and respected by his patients.

His death was due to heart disease, which came upon him rather suddenly and quite unexpectedly about eight months before his death. He was just forty-two years of age.

FOY ROBERSON,
Secretary Durham County Medical Society.

DR. E. M. HALL.

Dr. Hall was born in Alamance County, October 29, 1832. He died in Durham County, January 18, 1913. He was a practitioner of medicine for fifty-six years, having graduated from the University of New York City in 1856. At the time of his death he was one of the oldest members of the medical profession in Durham County. Practically his entire professional life was spent in Durham County, where he was loved, honored and respected by all who knew him.

FOY ROBERSON,
Secretary Durham County Medical Society.

DR. LEONA MARION ARCHEY.

Dr. Leona Marion Archey was born February 12, 1853, at Union, Monroe County, West Virginia, and died in his sixtieth year at his home in Concord, North Carolina, December 30, 1912. He was the son of Charles S. Archey and Francinah Shirly, of old Virginia stock. He received his preliminary education at Union, West Virginia, and later his classical training at Woodstock, Virginia. He commenced the study of medicine under his preceptor, Dr. W. S. Cline, of Woodstock, Virginia, and graduated from the College of Physicians and Surgeons, Baltimore, in 1880. He began the practice of medicine at China Grove and Enochville, North Carolina, in 1880, removing to Concord in 1883, where he practiced until his death.

He was a member of the Cabarrus County Medical Society, of the North Carolina Medical Society, and of the American Medical Association. He was Assistant Surgeon of the First North Carolina Infantry during the Spanish-American War. Dr. Archey was a Mason, being a member of Stokes Lodge, A. F. and A. M., Concord.

One of the leading physicians of Cabarrus County, he was specially known for his kindness in the sickroom, and for the earnest solicitation

for the welfare of his patients. He was both a reader and thinker, always keeping abreast with the times, and his ability and skill, together with his kind and sympathetic nature procured for him a very large practice. Dr. Archey was for many years a member of the St. James Lutheran church of Concord.

In 1882 Dr. Archey married Miss Mary C. Fisher, daughter of Capt. J. A. Fisher, of Rowan County—who died in 1884. One daughter of this marriage, Mrs. A. B. Kuhn, now lives at Newton, North Carolina. He afterwards married Miss Kate C. Reed, who, with two children, Miss Helen Francis Archey and Leona M. Archey, Jr., survive him. He is also survived by five brothers and two sisters.

M. L. Stevens, M.D.

EDWARD NELSON BOOKER, M.D.

Often those on the firing line are unnoticed and their deeds forgotten. This is probably true of the vast majority of medical men who fight and strive against our common enemy, Death, in the rural districts, remote from emergency aid, alone and undaunted by fear or favor. God only knows the struggles and privations they encounter and the real difficulties in medicine and surgery they must meet and surmount. We who have the specialist and hospital at our doors are liable to forget that this medical brother has been called upon to assume the whole responsibility, and right valiantly and fearlessly has he met the issue. Such a life has our brother, the lamented Dr. E. N. Booker, battled during the past generation. Located as he was, off the main thoroughfare, remote from railroad advantages, he was forced to meet the issues of life and death alone. But as responsibilities and necessity engendered real strength and resourcefulness, so the medical man is taught independence and self-reliance that makes him a power in his profession and community. Dr. Booker possessed that power.

Dr. Booker was born August 20, 1848, near Oak Forest, Cumberland County, Virginia. He prepared himself for college in the schools of his county, and at the age of fifteen instead of entering college was forced to take charge of his father's farm, his father having volunteered as a Confederate soldier. During the last year of the war he followed his father's example, entering the army. In 1873 he matriculated at the Medical College of Virginia, from which he graduated with highest honors in 1875. Dr. Booker came to Raleigh in 1876, and in the following year located permanently in the Polenta section of Johnston County,

for the first year forming a partnership with Dr. Farquhard Smith, now retired, of Lillington.

Dr. Booker's energy and medical ability soon secured for him a large and lucrative practice, extending for miles in every direction. He was not only sought as a physician, but as a natural leader among men. He was a sincere man and scorned deceit and hypocrisy. He had none of the policy serving attributes, catering to the wishes and views of others for their support. Yet he respected and honored the opinions of others. Therefore he was a fearless partisan—a vigorous Democrat, always ready to support and defend his party's position. Dr. Booker was ethical always, and towards his professional brother courteous and never known to take an advantage. He was loyal to his profession and kind and considerate towards the younger members. He was the second President of the Johnston County Medical Society.

Dr. Booker was married to Miss Elizabeth Winifred Young, of Johnston County, May 25, 1892. To them were born six children. He was an active member of the Presbyterian Church and a Ruling Elder of his church for twenty years. The following is his pastor's tribute: "The privilege of knowing and associating with Dr. Booker was a great one. He was true, sincere and honest. He was ever loyal to the church, true to his pastor and concerned for the spiritual welfare of his fellow man. He was priest of his house, looking diligently after the important interests of his own family, directing their steps in the ways of that higher and better life. He was a gentleman of the old school; his hospitality was of the kind that made the guest feel most free and easy." Seven years prior to his death he suffered a light stroke of paralysis, from which he never fully recovered. However, he continued his work until January, 1910, when he was incapacitated by that malady, cirrhosis of the liver, which caused his death May 21, 1910. The writer was privileged to see him at different times during his illness and always found him solicitous of the welfare of others. To his family, friends, and community his life has indeed been a benediction.

L. D. Wharton, M.D.

PRESENTATION OF PORTRAIT OF DR. P. L. MURPHY.

Dr. J. Howell Way, of Waynesville: *Mr. President*—At the meeting of this Society one year ago in Hendersonville it was my privilege to briefly address this body, offering a resolution that a committee be designated to have prepared a portrait of a distinguished former President, Dr. Patrick Livingston Murphy, Superintendent of the State Hos-

pital at Morganton from the day of its opening in 1883 to his untimely death in 1907, and to present the same on behalf of the Medical Society of the State of North Carolina to the State Library at Raleigh. The suggestion met with favorable consideration at your hands and a committee composed of Drs. R. H. Lewis, H. T. Bahnson, and myself were appointed to act for the Society.

For the committee I beg to report that we have performed the duties assigned us. Shortly after adjournment, with the approval of Mrs. Murphy, your committee procured the services of one of North Carolina's most talented artists, Mrs. Marshall Williams, of Faison, who, after some months, completed the portrait. A public meeting was announced in the press, to be held in the Senate Chamber at Raleigh, and on April 14 your committee, in the presence of a large and appreciative audience, representative of the best of Carolina's culture and intellectual development, presented the portrait. The presentation was made by Dr. R. H. Lewis, Dr. Murphy's lifelong friend, and accepted on behalf of the State by our distinguished first citizen, Gov. Locke Craig. The picture is a most admirable likeness of Dr. Murphy, and was much admired.

The report of the occasion, including the address of Dr. Lewis, was printed in full in the Raleigh *News and Observer* the day following. This address of Dr. Lewis' is so chaste and beautiful in composition, and withal so fitting a memorial of a great and good man, that I trust you will allow me to submit the printed report of the proceedings as my report as chairman of your committee and permit its being incorporated in the Proceedings.

The North Carolina Medical Society yesterday presented its handsome oil painting of the late Dr. Patrick Livingston Murphy, many years Superintendent of the State Hospital at Morganton, to the State Library. The presentation took less than half an hour, but it was a soulful sort of ceremony. Dr. J. Howell Way, representing the State Medical Society as its President, presided. Dr. R. H. Lewis, lifelong friend and a schoolmate, made the address, and Governor Craig, friend of the devoted dead, accepted the memorial on the part of the State.

It was the interest of Dr. Way that brought the matter of giving this portrait of one who was first among his profession, to the attention of his fraternity, and at the last meeting of the Society a resolution was unanimously adopted to offer this beautiful painting, which was to be the artistic touch of a kinswoman. In his opening remarks yesterday Dr. Way ventured to offer the suggestion that the portrait is but the forerunner of another monument which will stand at some other place and be an inspiration to thousands who did and who did not know him.

Dr. Way opened the exercises in the Senate Chamber at 11 o'clock yesterday morning, and briefly spoke of the character and the ability of Dr. Murphy.

The address of Dr. Lewis, of Raleigh, was the announced feature, and he was presented by the President. Dr. Way, in opening the exercises, said:

"*Ladies and Gentlemen:*

"Our coming together this morning, as you doubtless know, is at the instance of a committee of the Medical Society of the State of North Carolina, which has, under instructions from that body, prepared for presentation to the State of North Carolina a portrait of one of her most distinguished sons, Dr. Patrick Livingston Murphy. Some thirty years ago, when North Carolina was looking for a man of force, of strength, of power, of character, of capacity, of medical skill, of creative and constructive possibility, to take up the work and carry it forward of caring for the State's insane, the State selected for that purpose a young man who went to Morganton and who shaped and developed the State Hospital for the Insane at that point into an institution where it and its splendid head physician were recognized as leaders in caring for the insane not only in the South, but in the Nation. We are here today to present and to have received by the State a token of appreciation from his professional brothers of the work and character of that most splendid man. Pardon the suggestion here, as others are to follow me more fully into his life, that this token of respect is from his professional brothers, but it is, I trust, only the forerunner of a more substantial and more enduring memory, or monument I may say, that I trust in the next few years will take enduring form as a gift from an appreciative State, a gift of appreciation from hundreds and thousands of patients and friends, of patients who were conscientiously cared for, to that great nobleman. This portrait, ladies and gentlemen, is merely an initiation and beginning of that greater work that lies before the people of North Carolina, the people whom he honored, respected and served so well.

"I have now the honor of presenting to you his lifelong friend, his schoolboy companion, his professional confrere, Dr. Richard H. Lewis, of Raleigh."

Dr. Lewis said:

"At the last meeting of the State Medical Society a resolution authorizing the painting and presentation to the State Library by the Society of a portrait of the late Patrick Livingston Murphy, M.D., was introduced by Dr. J. Howell Way, of Waynesville, and unanimously adopted. In the sixty-three years of the life of the Society no such honor was ever paid before to one of its members, and none could have been more worthily bestowed. A committee of three, composed of himself, Dr. Henry T. Bahnson, of Winston-Salem, and your speaker, was appointed to carry out the purpose of the resolution. After consultation with Mrs. Murphy, the painting of the portrait was entrusted to the well known artist, Mrs. Marshall Williams, of Faison, his kinswoman, who knew him well and loved him, in the belief that there would be more behind her brush than the mere mechanical skill of the artist. And the result has fully justified that belief, for I have never seen, and I am sure those of you who knew him will agree with me, a more satisfactory picture than the portrait before you. It is a speaking likeness.

"The son of Patrick Murphy, able lawyer and business man, and Eliza A. Faison, of the well known family of that name, Dr. Murphy was born October 23, 1848, on his father's plantation in Sampson County, near Clinton. He was

educated in the schools of the neighborhood and prepared for college at the Military Academy of Colonel Tew, at Hillsboro, and at the celebrated Bingham School, but was denied further academic privileges by the hard conditions immediately following the war. But no doubt these very conditions served to toughen the fibre and strengthen his naturally independent and self-reliant character. In 1869 he entered the Medical School of the University of Virginia and after one year there took his second course at the University of Maryland, from which institution he was graduated M.D. in 1871. After a short experience as a country doctor in his native county, he moved to Wilmington, and there in partnership with one of the leading physicians of that city developed into a highly successful practitioner. Finding the routine of general practice not to his taste, he decided to make a change, and as the new asylum at Morganton had just been begun, he concluded that the management of such an institution would suit him better. With that in view, he moved to Augusta County, Virginia, where he had found the wife whose loving devotion, rare good sense and sympathetic interest in his work made her the ever present help that strengthened and supported him in the manifold worries, disappointments, and discouragements that lay before him. Accepting a position as assistant physician in the Western Insane Asylum of Virginia at Staunton, he spent three years there in diligent preparation for what he hoped would be his life work. And this special training, aided it is true by many strong testimonials as to his character and ability, without political influence, secured, as it ought to have done, his election as Superintendent over several of the most prominent physicians of the State, one of whom, it was said, had a trunk full of testimonials.

"When he assumed the duties of Superintendent in January, 1883, he found only the administration building and one wing with capacity for one hundred and fifty patients finished—the bare building without furniture or other equipment of any kind. The outside appurtenances, in the way of garden, farm, dairy, etc., were entirely lacking and the grounds were native woods and gullied hillsides. When he laid down his work with his life on September 11, 1907, after nearly twenty-five years of faithful service, the main building, with its base line of just one mile, and various other buildings, modern in structure and equipment, with a total capacity of eleven hundred patients, had been completed. The farm, garden, dairy and other outside departments were models of their kind and the grounds with their smooth, sloping lawns, beautiful shade trees, shrubs and flowers of many varieties, appealed most keenly to the sense of beauty and taste. No North Carolinian could approach the pile of massive buildings along the smooth roadway with its graceful curves winding through this scene of beauty without a feeling of pride in the fact that this splendid institution was the creation of his State.

"And the internal conditions of the Hospital itself, in the completeness of its equipment, its spotless cleanliness and thorough sanitation were, as they should have been, even more satisfactory. What a transformation or development!

"It is not claimed, of course, that this was the work of Dr. Murphy alone, for we must not forget the boards of directors behind him who were for the most part men of ability and breadth of view. But he was their inspiration. By his success as a manager, his honesty as a man, and his enthusiastic and wholehearted devotion to the institution he won and held their confidence and

loyal support. And by these same qualities he obtained the confidence of our legislators and thereby secured appropriations for the growth of the Hospital which under different circumstances would have been impossible.

"But it was not in the physical development of the institution that his chief glory lay. It was as the manager of a very extensive and complicated organization with its infinite details, the minutest of which was familiar to him, for nothing escaped his ever watchful eyes, in which he showed executive ability of the highest order, and as an alienist of the first rank that he justly claims our admiration and gratitude.

"Dr. Murphy was no mere office holder looking solely or chiefly to the emoluments and honors of the office, but he was a man of high ideals and the dominating motive of his life and work was the welfare of the insane. His attitude towards the inmates of his own Hospital was almost fatherly in its interest and concern. The alleviation of their sufferings and their restoration to home and friends, clothed and in their right minds, came first with him. And he had his reward in their respect and affection. An intelligent gentleman, not mentally alienated in the usual sense, who had been an inmate for many years, told me that he had, with one single exception, never heard an unkind criticism of him. What a tribute! But his interest was not confined to his own particular institution. The sufferings of the insane everywhere, and especially in his own State, appealed to his big heart and warm sympathy, and by word and pen he strove to advance their cause—and without making any invidious distinctions it can be said with truth, and it will be admitted by all familiar with the facts, that his was the most potent influence in the wonderful advance and improvement in the care and treatment of the insane of our State that was brought about during his twenty-five years of service.

"Dr. Murphy inherited the virtues of his Scotch ancestry, the harshness sometimes attributed to that virile people being tempered by the gentler blood of his mother, and balanced and lubricated by a keen sense of humor. He was a strong man, of vigorous intellect, courageous in thought and action, firm of will, of great tenacity and steadfastness of purpose, conscientious in the performance of duty, broadminded and of far seeing vision, frank and sincere, and of a warm and generous heart. He was a patriotic citizen, devoted to his State and her people, and a loyal and loving friend. It is easy to understand how such a man won and bound to him with hooks of steel many friends among the strongest and best men. He was one of the leading men in his specialty in our country and received in life the highest honors in the gift of the profession of our State, and after his passing away this signal tribute to his memory.

"After a long and painful illness, which he bore with the courage and fortitude to be expected of such a character, he fell on sleep September 11, 1907. Knowing the inevitable end, he had expressed a desire to be buried in a certain section of the grounds of the Hospital. And there, with the approval of the directors, he was laid to rest in that part of his mother earth he loved best. Covered with a mantle of the velvet turf of his own making, lulled by the rustling leaves of trees of his own planting, in the evening shadows of the mighty peaks of the Blue Ridge as the sun sinks into the golden west, he sleeps—awaiting the resurrection morn when he shall hear from the Great Physician the blessed words, 'Well done, good and faithful servant; enter thou into the joy of thy Lord.'

"And now, Your Excellency, it is my proud duty to present to the State, through you, our Governor, whom we all love, this lifelike portrait of one of her greatest, most patriotic and most useful sons."

GOVERNOR CRAIG ACCEPTS.

The acceptance of Governor Craig covered less than two hundred words and was an exceedingly tasteful and eloquent compliment to the great alienist. Governor Craig said:

"The State accepts with pride this portrait of Dr. Patrick Livingston Murphy, to be placed in the exalted company of her famous men. We and they who come after us should emulate his virtues, when we look upon his face ennobled by culture and great human sympathy. With a soul aglow with the gospel of universal brotherhood, he heard the cry in the darkness, and commanded North Carolina to a sublime and unselfish duty. The work of his love and genius is the greatest tribute to the character of our State, and has placed her foremost in the rescue of the unfortunate. His work was inspired by the beauty of devotion and sacrifice. In the joy and pathos of his genial spirit, he bore the sorrows and sufferings of his patients, until he fell in full activities and the satisfaction of accomplishment. With the full possession of his powers, 'he passed to that still country where hail storms and fire showers do not reach, and where the heaviest laden wayfarer at length lays down his load.' He is to us a priceless and everlasting possession, for he is of the Order of God's Nobility."

During the exercises the portrait of Dr. Murphy was exposed to the view of everybody, and was inspected before the assembly was called to order. It so happens that the large majority of the people who attended yesterday were not personal acquaintances of the Superintendent. It is correctly called "a speaking likeness." Nobody could have made the fine face show so well as the artist who knew him. And it is a work of art that can be admired by those who did not know him.

One of the physicians of Raleigh who did not know Dr. Murphy, yesterday said that the profession outside North Carolina esteemed Dr. Murphy as one of the greatest alienists in the world.

The specialist who spoke so handsomely of Dr. Murphy was Dr. Daniel Hughes, of Philadelphia, who declared the North Carolina alienist the greatest man in his chosen line in the country, if not in the world. "It was Dr. Murphy who abolished the strait jacket in the hospitals," the Philadelphia doctor said.

Many prominent men and women of North Carolina were here yesterday. Not all were relatives, but a large number of these were. Among those who came to attend the exercises, outside Raleigh, were Mrs. Murphy, Mrs. C. J. Williams, Rev. R. Murphy, Mrs. Murphy, and their son, Patrick; Livingston Murphy, of Greensboro; Patrick Murphy Williams, Mrs. John M. Faison, of Faison; Miss Annie Evans, of Fayetteville; George Ward, of Wallace; Dr. Isaac M. Taylor, of Morganton; Miss Kate Pearsall, a niece, of Morganton; Col. P. M. Pearsall, a nephew, of New Bern; Dr. W. W. Faison, of Goldsboro, a first cousin of Dr. Murphy; Mrs. Marshall Williams, Dr. J. Howell Way, Dr. George G. Thomas, of Wilmington; Dr. H. T. Bahnson, of Winston-Salem; Prof. Collier Cobb, of Chapel Hill; E. J. Justice, of Greensboro, and several

physicians of the city, among them being Dr. John A. Ferrell, a kinsman, of this city.

In concluding the exercises, Dr. Way said:

"*Ladies and Gentlemen:*

"This completes the purpose of our coming together, with a single exception that I trust you will carry the thought that I suggested to you just now, that this should be the beginning of a more enduring monument to this great and noble physician of North Carolina. We thank you very much for your kindly presence."

Newspaper Obituary Notices

Dr. Frank Duffy Dead.

New Bern, Nov. 6.—After an illness lasting for more than three weeks, Dr. Francis Duffy died at his home, No. 39 East Front Street, shortly after 9 o'clock last night. Dr. Duffy was first taken ill with an attack of malarial fever, and this later developed into typhoid. At first his condition was not thought to be serious, but as the disease progressed he grew steadily worse and for several days past it was seen that there was no hope for his recovery and the end was not unexpected.

Dr. Duffy was one of the best known physicians in this section of the State. He is survived by his wife and three children.

Funeral of Dr. Waldrop.

Hendersonville. March 3.—The funeral services over the remains of the late Dr. J. G. Waldrop, who was the oldest physician of Hendersonville, were held Sunday afternoon at the First Methodist Church, a large number of friends and acquaintances attending. The services were in charge of Dr. G. H. Detwiler, who was a personal friend of the deceased, assisted by Dr. R. A. Child. The former drew a mental picture of the deceased as a citizen and a physician, dwelling at length upon the rugged honesty of the man's life. At the grave the services were in charge of the Masons, of which lodge Dr. Waldrop was a member for a long time.

Dr. R. J. Grimes.

(Raleigh News and Observer.)

The subject of this sketch was born July 3, 1852; was educated at Trinity College, afterwards taking medical course at the University of Pennsylvania; graduating in 1875. He was married in 1879 to Miss Frances Whichard, who survives him. To them were born two children, Mrs. Mayo and Miss Effie, both of whom are living.

He was away from home waiting on a patient when attacked by appendicitis. He underwent an operation, which was unsuccessful, and he lived but a few days. He died at his home in Bethel, N. C., Saturday morning, September 28th. The funeral services were conducted from the home by Rev. N. H. Shepherd, pastor of the Baptist church. The funeral procession from the home to the family burying ground was almost a mile long.

The friends tried to sing "Asleep in Jesus," and other appropriate songs, with husky voices and through their tears, which told the heartfelt sympathy for the bereaved ones. Remember,

"There is no death, the stars go down,
To rise upon a fairer shore,
And there in Heaven's jeweled crown
They shine forevermore."

Dr. Phifer Gibson.

(Charlotte Observer.)

Salisbury, March 20.—Dr. Phifer Gibson, aged seventy-four years, died at the home of his daughter, Mrs. Frank L. Robbins, this afternoon, following a protracted illness. While he had been in poor health for two years, his death was unexpected at this time. He was for years a prominent physician, druggist, and business man in Concord, and was widely known. He came to Salisbury to live with his daughter several months ago.

He is survived by his daughter and a number of other near relatives. The body will be taken to Concord tomorrow for burial.

Isaac Henry Foust, M.D.

In the death of Dr. Isaac Henry Foust the First Presbyterian Church of Salisbury, N. C., has lost a valuable member. Dr. Foust was born May 8, 1848, and died January 21, 1913. In early life he united with the Presbyterian Church under the pastorate of Rev. Jethro Rumple, D.D., and by his intelligent zeal soon arose to a prominent place in the life of the church. He was a faithful student of the Scriptures and was especially gifted in public prayer. He was an ardent prohibitionist, and was deeply interested in social and civic reforms. Charitable in thought and deed, gentle in manner, patient in suffering, calm in the midst of storm, courageous in the face of losses and difficulties, he was more than a Stoic—he was a Christian.

In addition to a wide circle of friends, who mourn his death, he leaves a devoted wife, who was Miss Amelia L. Horah, and a daughter, Mrs. Lillian S. Cook.

"Blessed are the dead who die in the Lord."

Dr. Lawson Harrill.

(Raleigh News and Observer.)

Statesville, Aug. 26, 1912.—Dr. Lawson Harrill, one of Statesville's best known and most prominent citizens, died yesterday morning at 10:30 o'clock, after an illness of several months. His condition had been critical for some days and out of town relatives were called to his bedside. The funeral services were conducted from the residence this afternoon at 5 o'clock.

Dr. Lawson Harrill was a native of Rutherford County, and was in the seventy-fifth year of his age. He graduated from Jefferson Medical College, Philadelphia, in 1861, and returning to his old home in Rutherford he joined the Confederate Army and raised the first secession flag in that county. From that time on he took an active and prominent part in the war, serving as private, lieutenant colonel, and colonel. He was in entire command of a number of companies which engaged in battle with the Yankees on one occasion, and was congratulated for the manner in which he handled his troops.

He was for a time in charge of a military hospital in Virginia, and later he and his company were sent to Wilkes County, this State, to suppress lawlessness on the part of deserters. He was in many battles, and his army record was a very creditable one. Since the war he has been prominent as a Confederate veteran.

During the war Dr. Harrill married a Miss Carmichael, of Wilkes County, and after the war he moved to Kansas, where his wife died. Returning to Wilkes, he married Mrs. William Carmichael, widow of his brotherinlaw, and later the family moved to Statesville. During his long residence here Dr. Harrill has been identified with the business interests of the town in various ways, and was for a time Mayor of this town. He was also for years State Smallpox Inspector.

Dr. Harrill is survived by his second wife and two children—Mrs. J. H. Wood of Asheville and Miss Jettie Harrill of Statesville—and one stepdaughter, Mrs. J. B. Ives, daughter of Mrs. Harrill by her first marriage.

Dr. Andrew J. Ellis.

(Raleigh News and Observer.)

The death of Dr. A. J. Ellis occurred November 18, 1912, at Garysburg, N. C. He was the son of the late Robert A. Ellis and Lucy Person Ellis, of Garysburg, N. C. He was born on the 17th day of May, 1834, at Blakley, then a busy settlement upon the Roanoke River, where the old Petersburg Railroad met the head of the navigation of that river. After attending our State University, he entered the Medical College of Pennsylvania at Philadelphia, where he graduated in the spring of 1858, and began at once the active practice of his profession in his home village, where he has always lived.

November 18, 1859, he married Sarah J. Ramsey. Of this marriage were born a son bearing his name, who died in his young manhood, and by whose side he was buried—and a daughter, Minnie, wife of John H. Weaver, who now resides in Texas.

In the War between the States he organized an artillery company, and saw active and hard service in Bickett's attempt to recapture New Bern, and thereafter in the defense of Wilmington, after the fall of Fort Fisher. The history of these campaigns says of him that he was a pattern both for discipline in camp and judgment and coolness under fire. After the war ended he resumed his practice of medicine, and it is but just to say of him that he won, not only the confidence, but the love of those whom he attended in sickness—and it will be said of him as it is written upon the monument of that great citizen and surgeon, Dr. McGuire, of the city of Richmond, Virginia, that he was "our beloved physician."

On the 16th day of December, 1885, he married again, Margaret Bell Fitzhugh, widow of the late Waverly Fitzhugh and daughter of the late John J. Bell. Of this marriage was born one daughter, Margaret, now wife of W. T. Davis, of Petersburg, who, with her mother, survive him.

Though nearly seventy-nine years old, Dr. Ellis was of a robust and well-rounded figure, weighing nearly two hundred pounds. He was strong, handsome, intrepid, and magnetic to all who met him. One look into his manly face convinced anyone of his unswerving honesty and dauntless courage, which characterized his every deed. During his daily walk in life, he builded for himself in the hearts of all who knew him monuments richer and more

enduring than words, however beautifully spoken, can build. He was the architect of his own eulogy, and when he died the work was then completed. In all his relations in life, to know was to admire him, and to think of him now is to mourn his absence. His Christian advice, cheering words, and the inspiration of his courage are closed to us forever, but we are rich in their remembrance.

Dr. W. P. Ivey.

Lenoir, June 28.—Dr. W. P. Ivey died at his home on West Main Street early this morning after a brief illness of congestion of the brain. He was stricken during the night, and on Wednesday morning was found by Mrs. Ivey in an unconscious condition, from which he never rallied.

The deceased was one of the most prominent physicians in this section of the State. After graduating from Trinity College, he took up the study of medicine at the University of Maryland. After he graduated in medicine, he was elected first assistant physician of the Western Hospital for the Insane at Morganton, which position he held most acceptably for six years. In 1890 he moved to Lenoir and took up the practice of his profession and for years he was a member of the State Board of Health. For several years he was the resident surgeon of the Carolina and Northwestern Railway Company and chief medical examiner of Caldwell County for the United States Pension Board. He was treasurer of the board of stewards of the Lenoir Methodist Church. Since the establishment of the Citizens Light and Power Company he has held the office of president. He was also a member of the board of trustees of Davenport College.

In 1887 he was married to Miss Mamie Sherrill, daughter of Mr. and Mrs. Elber Sherrill, of Sherrill's Ford, Catawba County, who with six children survive to mourn their loss. He is also survived by an aged mother, four brothers, and two sisters.

Dr. Ivey was the oldest son of the late Rev. George Washington Ivey, who was known and beloved by people all over the State. The deceased was in his fifty-sixth year, having been born August 23, 1856.

Dr. J. C. Patrick.

(Charlotte Observer.)

Kings Mountain, Aug. 26.—Dr. J. C. Patrick, one of the best known physicians in this section of the State, died at his home here yesterday morning from a cancerous affection from which he had suffered for the past four years. He had been to numerous hospitals over the country in a vain seach for relief, but without avail, and for the past year had been confined to his home. He was in his forty-second year.

Dr. Patrick had been honored by his town in many ways, having served as alderman for four years and was Mayor of Kings Mountain for the same length of time, giving up the latter position on account of declining health.

He married Miss Nell Brown, daughter of the late J. W. Brown, formerly of Mecklenburg, who survives him. There were no children. He also leaves his father, Mr. R. A. Patrick, of White Oak, S. C., together with eight brothers and six sisters.

The funeral was held this morning, conducted by Rev. A. T. Lindsay, president of Linwood College, and the interment was in the town cemetery with

Knights of Pythias honors. The floral tributes were numerous and handsome, attesting the esteem in which the deceased was held.

Dr. Patrick was a faithful member of the A. R. P. Church, and was a man of noble traits of character, and no one will be more greatly missed here than he.

Dr. Richard M. Norment.

(Raleigh News and Observer.)

Lumberton, July 30.—Dr. Richard M. Norment, Lumberton's oldest citizen, died this morning after an illness extending over a year, most of which time he had been confined to his home.

Dr. Norment was born in or near Charlotte, February 1, 1829. He came to Lumberton sixty years ago and has spent most of that time here, always being loved and held in the highest esteem of the people regardless of race, of all this section, and in his passing the man who has done more than any other to relieve suffering humanity in Robeson County during the past sixty years has gone.

He served through the Mexican and Civil wars, having organized the first company in this county for service in the latter war. At the close of hostilities, he returned home, where, with the exception of a few years spent in Charlotte, he has since resided here. Dr. Norment represented the county in the Legislature several times, first as Democratic Senator and later as Republican Member of the House. In 1900 he was appointed postmaster, which position he retained until death.

Dr. Norment was twice married, and is survived by his second wife and three sons, Dr. T. A. Norment, by the first union, and R. H. N. and W. McD. Norment by the second.

The funeral will be conducted from the residence tomorrow afternoon at 3 o'clock by Rev. J. W. Bradley, pastor of the Methodist Church, assisted by Revs. C. H. Durham of the Baptist Church and R. E. Steele of the Presbyterian Church. He will be buried with Masonic honors and the interment will be made in the Norment cemetery.

Dr. L. M. Archey.

(Charlotte Observer.)

Concord, Dec. 30.—Dr. L. M. Archey died last night of heart failure. Dr. Archey was apparently in his usual health yesterday afternoon and was down town.

He was suddenly stricken about 10:30, and his wife gave him a stimulant to relieve his condition. He seemingly went to sleep. In a few moments Mrs. Archey heard him gasping and before further aid could be summoned he was dead.

At one time the deceased was among the most influential citizens of Concord. He came here from his home in Virginia in 1883 and located for the practice of medicine. He joined the First North Carolina Regiment as Assistant Surgeon in the outbreak of the Spanish-American War, and at this time he enjoyed the largest and most lucrative clientele in this place.

He is survived by his wife and three children. He was twice married, his surviving wife being a daughter of the late Mr. Joseph Reid.

Dr. Frank T. Meriwether.

(Asheville Gazette-News.)

The death of Dr. Frank Tryon Meriwether, one of the noted surgeons of the country, occurred Thursday morning, June 12, at his hospital, following an operation for appendicitis on Monday. His death comes as a shock to numerous friends, but it was not unexpected. Alarming reports came from the hospital soon after the operation was performed, but until Wednesday the friends of Dr. Meriwether had some hope. He had saved so many sufferers of the same kind that it was hard to conceive that his death could result from appendicitis. His condition continued to grow worse, however, and late Tuesday night Dr. Sloan arrived from Cleveland. Early next morning Dr. Sloan reopened the abdominal cavity; and it was after this that the reports that death was imminent began to reach the many inquirers.

Dr. Meriwether was born in Louisville in April, 1865. He was the son of William Meriwether, a member of one of the pioneer and leading families of Kentucky. He received his medical diploma from the University of Louisville, and for a few years practiced medicine in Louisville. Then he entered the United States army as assistant surgeon with the commission of lieutenant. In the year 1896 he retired from the army on account of his health and came to Asheville, where he has resided ever since. It was after Dr. Meriwether's coming here that his broader and more useful work began, and it was not long before he won an enviable reputation among the members of the profession as being one of the most skillful surgeons in the South. Physicians began to send patients to him from all over the State, and from other States, for operations. The quickness with which he worked saved many lives. At the same time his gentleness and kindness to patients won for him countless lasting friendships. An evidence of this were the numerous inquiries that have been made concerning his condition and the sorrow that his death has caused. There is a general feeling that not only Asheville but the entire country has sustained a distinct loss in the death of a man who was equipped to do such good.

Dr. Meriwether is survived by three children: Benjamin and William Meriwether, and Miss Margaret; one brother, D. L. Meriwether, of Asheville; three sisters, Mrs. C. C. Mengel, Mrs. Samuel Dorr, and Miss Lillie Tryon, of Louisville.

Dr. Meriwether was a member of many medical organizations. He was a member of the Masonic fraternity, one of the highest Masons in the State. The funeral arrangements will be in charge of the various Masonic organizations.

The community is acutely conscious of its loss in the passing of Dr. F. T. Meriwether. He was a man endowed with hands and a mind. His great talent was devoted to service, to the amelioration of suffering, and the conservation of human life. In any avocation he would have passed mediocrity, for he was a man of superior mental stature; but apparently he was born to the healing art, and in the practice of surgery his abilities found their highest expression, an achievement greater, it is not to be doubted, than he could have accomplished in any other work.

Of fine presence, handsome, magnetic, his personality was admired as his

professional attainments were respected. He was one of the foremost in that group of physicians who have added so greatly to the national fame of Asheville.

ROBERT S. YOUNG.

Resolution offered by Dr. E. G. Moore, and adopted by a rising vote, June 19, 1913:

Resolved, by the North Carolina Medical Society now in session at Morehead City:

That we have just heard with profound sorrow of the sudden death of Dr. Robert S. Young, of Concord.

That this intelligence has brought to us at this closing hour the shadow of a great grief and the gloom of a great sorrow.

That we give assurance to the bereaved and grief stricken wife and family of our heartfelt sympathy, and instruct our Secretary to convey by telegram these expressions of sympathy and condolence.

Dr. J. Allison Hodges, Richmond, Va.: *Gentlemen*—Last night our hearts were touched and our emotions aroused when we heard of the deaths of such men as Dr. Ivey and Dr. Francis Duffy, who were stricken down in their labors, and I thought to myself, What a great privilege it is to be a member of the North Carolina Medical Society and to be so remembered when one has passed into "the Great Beyond." I have simply risen to place upon the bier of my friend—for I am still a member of this Society—a loving flower of affection, fragrant with the memories of a lifelong friendship, for I knew him and loved him for what he was. He was all a man, and the elements were so mixed in his that I loved him and honored and respected him, and this day would pay this simple tribute to his honored memory.

Notice to County Societies:

1. The annual election of officers should be held in December.

2. The 1914 dues should be paid at the December, 1913, meeting, or at any rate before January 1, 1914.

3. Any error in the matter of names, initials, year licensed, college attended, etc., should be reported to the Secretary. The information recorded is that sent in by the individual doctors, the secretaries of the county societies, or taken from the Transactions of former years.

4. The recent meeting of the Society changed the by-laws so that the secretaries of county societies are required to make their report to the Secretary of the State Society of membership and dues not later than January 31. The members should pay promptly so that he can carry out his responsibility.

Closing of Sixtieth Session

Dr. J. P. Munroe, President, Charlotte: I want to say just one word of thanks and appreciation. Of course you understand that I thank you very much for the honor conferred upon me in making me your President. I appreciate the cordial support you have given me in the performance of the duties that have devolved upon me at this meeting. When I was elected President of this Society I had had comparatively little experience so far as the internal workings and machinery were concerned. My only connection with the Society had been in the general scientific work, and it was rather natural, therefore, that my mind dwelt more upon the work to be done in this general meeting, the scientific side, and if there was anything I wanted to see accomplished it was to have a good meeting so far as papers were concerned. I have heard it intimated that the character of the papers read in the State Society's annual meetings was not so high as it should be. Gentlemen, we have had papers here today and yesterday and the day before that would read well anywhere. We have had discussions of the highest character possible, and I want to thank the gentlemen who presented these papers, and also the chairmen of the various sections and our Secretary for their efficiency in getting up this program. I want to thank the gentlemen who have stood by us night and day and given their brothers opportunity to be heard. That is really what we came for, and if we come here to get information, to rub up against each other, let us do as we have done today, when we had almost as full attendance as at any time. I thank you for coming and for staying to the end.

I will now ask Dr. G. W. Pressly and Dr. Fletcher to escort the President-elect to the chair.

Dr. Jas. M. Parrott, Kinston: *Gentlemen of the North Carolina Medical Society.* I very profoundly appreciate this manifestation of your esteem and confidence. I have heard our retiring President remark several times this morning that the time is limited, and I am not going to burden you with any remarks, because I have been very forcibly impressed with his suggestion. However, I would be untrue to myself did I not attempt in some feeble way to express my gratitude. The North Carolina Medical Society has been a thousand times kinder to me than I have deserved. For the past fifteen or sixteen years I have followed the North Carolina Medical Society from one end of North Carolina to the other, and from Virginia to the South Carolina line. This is the

third or fourth time I have been here with you at Morehead. I have seen new faces come upon the scene and old faces pass away, and I have learned to have a very profound respect for the profession and a very great regard for the individual members. I have seen members of the Society do things I can not indorse, but I have lived to see the time when I am certain this Society is moved by better judgment than individuals. I do verily believe that our Society is the most altruistic organization in North Carolina today.

It will be my purpose and aim and it is my desire during the next twelve months to take one more step forward in the advancement of the professional work in North Carolina. I shall be at the service of our Secretary and of the Secretary of the State Board of Health whenever they may need my services, or whenever my services, backed up by the influence of the office which I hold will be of material assistance to them or will render the people of North Carolina, as well as the profession, any degree of value whatsoever.

I can not say any more. If I could express my real feeling I would be glad to do so, but I can not. Gentlemen of the Society, I certainly do appreciate this very high compliment.

With your permission I will defer the appointment of the chairmen of the various sections to a later date. Dr. Ferrell and I will confer about it later, and I should be very glad to receive any suggestions from the Society, so that we can work together.

I am going to ask you to excuse my frailties and faults, and remember that you have elected a man who does not in any way measure up to my distinguished predecessor or those who have gone before. Again I thank you.

Dr. L. B. Morse, Hendersonville: I rise to make a plea in behalf of the Southern Medical Association. It was my privilege to be present at the last meeting in Jacksonville, Florida, and I would like to give you some idea of a medical organization which has sprung to large proportions in the South in the last few years. The character of this organization, I believe, assures it of a very considerable future. It stands for the highest development of the South as no similar organization has ever done in the past. I know personally of a large number of people here who contemplate at least joining this Society. I recently have received a letter from Dr. Harris asking me to make an appeal to this organization, and I would ask those members of the North Carolina Medical Society who are here and who contemplate joining the Southern Medical Association at some time to give in their membership while here. The membership fee is only three dollars, and I believe the organization is

one that none of us can afford not to be associated with. The Journal alone is worth the money, and the Association stands for everything that is best in the South. Since January first the membership has increased over 600. There are now over 2,200 members, and only three and a half years ago there were only 300. Every person who belongs to the North Carolina Medical Society should be affiliated with the Southern Medical Association.

Dr. John A. Ferrell: I think it is customary each year, in connection with the American Medical Society, to have a delegate representing this Society at the Conference of Medical Colleges throughout the country, and also an annual conference connected with the American Medical Association on medical legislation. We were called on to name delegates for these places, and as they had not been provided for, Dr. Munroe designated the delegates. Perhaps it will be well enough to delay the matter until requests for the names of the delegates are received, or you can take it up now.

Motion carried that the President and Secretary appoint such delegates as may be necessary to represent the Society at these conferences.

Adjournment.

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CONJOINT SESSION

Conjoint Session State Board of Health With North Carolina Medical Society

REPORT OF THE SECRETARY OF THE NORTH CAROLINA STATE BOARD OF HEALTH FOR 1912-1913.

W. S. Rankin, M.D., Secretary.

Mr. President, Members of the State Board of Health, and Fellow Members of the North Carolina Medical Society:

I have the honor to submit, in obedience to section 8, chapter 62, Laws of 1911, this, the annual report of the Secretary of the State Board of Health. I have asked Dr. C. A. Shore, Director of the State Laboratory of Hygiene, and Dr. John A. Ferrell, Assistant Secretary for the Eradication of Hookworm Disease, to prepare and read that part of this report which relates to the work of their respective departments. This they have kindly consented to do. I shall deal, therefore, more directly with the general concerns of the Board.

Legislation by the General Assembly of 1913:

The General Assembly of 1913 made a very favorable record in health legislation.

Probably the most important single piece of legislation enacted by the General Assembly of 1913 was an act requiring the registration of all births and deaths occuring in the State of North Carolina, beginning October first, next. With the single exception of the act establishing a State Board of Health, the registration law is the most important piece of health legislation ever enacted by the General Assembly of North Carolina. The need of such legislation, the absolute necessity for accurate records as to births and deaths for furnishing a true index to the progress of health work, and for supplying facts on which health policies must be intelligently based, has been so thoroughly discussed in Bulletin articles and newspaper articles in this State preliminary to the enactment of the vital statistics bill that it is unnecessary, especially in this Society of professional men, to point out the advantages of a registration law for births and deaths.

The particular law adopted is what is known among registration officials of the United States and the world as the "Model Vital Statistics Law." The model law has been prepared by the United States

Bureau of the Census and the various State bureaus of vital statistics of the United States. The model bill has existed for about twelve or fifteen years, and either the bill in its entirety or the bill with slight modifications has been adopted by all of the States that have adopted registration laws since the bill was prepared. The model law has been revised every year or so since it was first prepared. The revisions embrace the necessary changes or additions that the experience of registration officials, National and State, suggest to them as helpful or necessary. This model bill, with one or two amendments, was adopted as our registration law. Of the amendments only one was objectionable—an amendment allowing physicians and families in rural districts ten days within which to register deaths. If, however, this amendment should be found, in actual practice, to be of serious hindrance in the execution of the law we anticipate little trouble in having it removed by some future General Assembly.

The adoption of the model registration law by our State requiring the registration of both births and deaths, and its satisfactory enforcement, which is yet to be accomplished, will make our State the twenty-sixth State in the Union to adopt the registration of deaths, and the thirteenth or fourteenth State to adopt the registration of births.

Another important piece of legislation enacted by the General Assembly was the General Amendments Bill, which amended several sections of the old health law and increased the appropriation to the State Board of Health $10,000 annually. The new work made possible through the increase in the appropriation is by far the most important feature of this last piece of legislation. Another change in the General Amendments Bill, which is important enough to deserve mention in this connection, has to do with the title of the county health official: Where counties employ physicians to give a pinch of their time to treating diseases, such a physician will be known officially as the county physician. On the other hand, where the county employs a man to give three hundred and sixty-five days a year of his time to the health work of the county, such an employee will be known as the county health officer. This official distinction between county physician and county health officer, replacing the old term "county superintendent of health," that applied to both the man employed for part of his time and the man employed for his full time, is important. If a county employs a man for part of his time to treat its sick convicts and prisoners in the convict camp and jail, and its dependents in the county home, and to make one or two postmortem examinations a year for the coroner, and one or two commitments to the insane asylums of the State, such an employee has

no more right to the title of health officer than has the sheriff or jailer of the county. His work is that of a physician treating the least important part of the population. Hereafter, by statute, he will be known as the county physician, and the people of such a county will not be misled by the term "county superintendent of health" into believing that their county is doing health work. Where, on the other hand, the county employs a man to give his entire time to the health interests of the county, ninety-five per cent of his duties will have to do with the prevention of diseases. His work as a physician, that is in treating and attempting to cure disease, will be of little consequence as compared with his work as a health officer in the prevention of disease. Hence such an official will be known hereafter as the county health officer.

For the important legislation outlined above the health officers and health interests of North Carolina, and the people of the State generally are indebted especially to Representatives R. R. Williams, of Buncombe County; B. T. Cox, of Pitt County; J. R. Gordon, of Guilford County, and to Senators F. P. Hobgood, of Guilford County, and L. B. Evans, of Bladen County, whose able leadership had much to do with the favorable attitude of the last General Assembly to public health work.

The Society will recall that at its meeting in Hendersonville last year it passed a resolution asking Hon. John M. Faison, and our other Representatives in the Congress and Senate of the United States, to use their official influence in securing some favorable action from our National Government directed to the control of pellagra. As you are aware Dr. Faison, a member of this Society and representing the Third Congressional District, has been successful in obtaining an appropriation of $45,000 for the study of pellagra. Dr. Faison is deserving of the appreciation of this Society for his valuable efforts for the prevention of pellagra, one of the worst diseases with which we have to contend.

Another matter which should probably be mentioned here is the successful culmination of the efforts of the American Medical Association, the American Public Health Association, the Committee of One Hundred, and other organizations to secure the appointment of a committee on public health in the United States Congress. Until recently all effort to secure the interest of the lower House in the National Assembly in public health matters has been very much hindered because of the absence of any committee whose special duty was to consider health matters. Public health resolutions and bills heretofore have been re-

ferred to the Committee on Interstate Commerce and have received but a small share of the attention of that committee. The Committee on Public Health of the United States Congress recently organized was the result of a motion introduced by Hon. E. W. Pou, representing the Fourth Congressional District. In securing the organization of this committee Mr. Pou has done much to promote the cause of public health and has honored his own State, and is due the gratitude of the North Carolina Medical Society.

Present Status of the State Health Work:

The writer recently prepared, at the request of the Secretary of the Southern Sociological Congress, several charts illustrating the fundamental State health policies generally recognized and being developed in the Southern States. The charts are prepared from questionnaires submitted to the secretaries of the state boards of health and returned to the writer. The States of Tennessee, Georgia, and Louisiana did not reply to the inquiry, and it is for that reason that the names of those States do not appear on the charts.

Chart No. 1. Shows the years in which ten Southern State Boards of Health were established, the present annual revenue of those boards, the provision for vital statistics in the States mentioned, and the year of establishment, and the number of analyses for the year 1912 of the State laboratories of hygiene of the ten States shown on the chart. The comparison of the work of the laboratories of hygiene as indicated on the charts needs a word of explanation: In some of the States all the examinations of stools for hookworm eggs are made in the laboratories of hygiene, and in other States a large part of such examinations are made in the field.

STATE BOARDS OF HEALTH OF SOUTHERN STATES

State	Organized.	Annual Revenue	Vital Statistics	Laboratory of Hygiene	
				Organized.	Number Analyses 1912
Virginia	1871	$35,000	Model Law Adopted	1908	13,770
Maryland	1874	35,000	Registration State	1893	7,148
South Carolina	1878	26,500	No Provision	1909	5,380
North Carolina	1873	50,000	Model Law Adopted	1905	14,823
Kentucky	1878	----------	Registration State	1911	36,239
Florida	1889	75,000	Model Law Provided	1913	20,000
Arkansas	1913	8,900	Model Law Provided	1913	----------
Mississippi	1877	19,000	Model Law Provided	----------	----------
Georgia	1903	30,500	No Provision	1905	7,295
Texas	1909	49,320	No Provision	1912	2,164

Chart No. 2. Shows the publicity work in the form of bulletins, press service, and lectures being carried on by the ten Southern States, the names of which appear on the chart.

EDUCATIONAL ACTIVITIES OF STATE BOARDS OF HEALTH OF SOUTHERN STATES.

State	Bulletins			Press Service		Lectures
	Frequency	Size	Mailing List	Frequency	Number Papers	Number
Virginia	Monthly	16–32 pages	20,000	Weekly	165	About 400
Maryland	0	0	0	0	0	Many
South Carolina	Quarterly	16 pages	12,000	0	0	0
North Carolina	Monthly	16–32 pages	40,000	Weekly	250	About 100
Kentucky	Monthly	16 pages	4,000	Irregular	250	About 250
Florida	Monthly	16 pages	5,000	Weekly	170	Many
Arkansas	----------	----------	----------	----------	----------	----------
Mississippi	Monthly	16 pages	5,000	Weekly	4	About 300
Georgia	Quarterly	30 pages	5,000	Semi-weekly	150	Many
Texas	Monthly	78 pages	5,000	0	0	----------

Chart No. 3. Shows the protection of public water supplies in the ten Southern States appearing on the chart. The chart indicates four principal safeguards which a State may require of public water supplies owned by municipalities, corporations or individuals for protection of public health. These safeguards are briefly: (*a*) That no water supply shall be selected until a map of the proposed watershed has been made by a competent engineer, submitted to and approved by the State Board of Health; (*b*) that preliminary plans and specifications for reservoirs, storage basins, pumping stations, etc., be prepared by an engineer and submitted to the Board for its approval before their adoption; (*c*) that regular inspections of the watersheds shall be made regularly and reported under oath by those in charge of the water supply to the State Board of Health, and (*d*) that regular analyses of samples of the water of public water supplies shall be made by the State Laboratory of Hygiene. It will be observed from the chart that our State requires all four of these protective safeguards.

A study of the quarantine regulations in force in the Southern States shows them all equally inefficient, as the generally unsettled status of quarantine and disinfection would suggest. Some of the States make the rules and regulations governing quarantine and disinfection, leave it to the local authorities to enforce them, and have no authority whatever for requiring the enforcement of such rules and regulations. Two Southern States, North Carolina and Florida, leave both the making and enforcing of the rules and regulations governing quarantine and

MANAGEMENT OF PUBLIC WATER SUPPLIES BY STATE BOARDS OF HEALTH.

State	Watershed Maps	Watershed Inspections		Plans and Specifications	Analyses	
		Required	Frequency	Filtration and Sewerage System	Required	Frequency
Virginia	Not required	No	----------	Not required	No	----------
Maryland	Not required	No	----------	Not required	No	----------
South Carolina	Not required	No	----------	Not required	Yes	Quarterly
North Carolina	Required	Yes	Quarterly	Required	Yes	Monthly
Kentucky	Required	Yes	Irregularly	Required	Yes	Irregularly
Florida	Not required	No	----------	Not required	No	----------
Arkansas	Not required	No	----------	Not required	No	----------
Mississippi	Not required	No	----------	Not required	Yes	Irregularly
Georgia	Not required	Yes	Irregularly	Not required	No	----------
Texas	Not required	Yes	----------	Not required	No	----------

disinfection to those concerned—the municipal and county boards of health—believing in the principle of local self-government, and that the local boards that do not appreciate and can not make the proper rules and regulations for quarantine and disinfection can not be depended upon to see that such rules and regulations are enforced if made by State authorities. The management of smallpox without any quarantine is in force in North Carolina and Florida, and practically in force in South Carolina. Five States in the Union are now managing smallpox without quarantine.

The Present Status of the State's Health:

Here, again I have endeavored to make the essential features under this heading easily assimilable by the visional route, as the optic nerve is anatomically the most direct and biggest single track from things to thought.

Chart No. 4. Shows the death rates from the principal preventable diseases in North Carolina for the years of 1911 and 1912 as compared

DEATH RATE OF NORTH CAROLINA 1911-1912

Causes	In Registration Area in N. C., 1911	In Registration Area in N. C., 1912	In Registration Area in U. S., 1911
Total	18.3	17.3	14.2
Tuberculosis	252.9	234.3	158.9
Pneumonia	117.0	87.8	133.7
Typhoid fever	68.3	42.0	21.0
Diarrhea (under two years)	166.1	140.0	77.4
Malaria	24.5	33.9	3.0
Whooping Cough	52.3	28.2	11.3
Measles	17.0	9.5	10.0
Scarlet Fever	2.6	2.3	8.8
Diphtheria	10.4	13.2	18.9

with the average death rates for the same diseases in the registration area of the United States.

Chart No. 5. Shows the actual number of deaths occurring in the State with the death rates shown on Chart No. 4, which were compiled from one-sixth of the State's population made to apply to the entire State.

ESTIMATED TOTAL DEATHS IN NORTH CAROLINA 1911-1912

Causes	Occurring 1911	Occurring 1912	Would Occur with Average Death Rate
All Causes	42,027	40,893	33,563
Tuberculosis	5,805	5,541	3,587
Pneumonia	2,746	1,978	3,305
Typhoid Fever	1,624	992	526
Diarrhea (under two years)	3,812	3,329	2,255
Malaria	570	803	----
Whooping Cough	1,201	668	255
Measles	392	227	275
Scarlet Fever	661	49	260
Diphtheria	239	312	479

Chart No. 6. Contains more encouragement than all other facts connected with the health work of this State with which the writer is familiar. It shows changes in the general death rate from 1910 to 1912, and shows further that the reduction in the general death rate has been due to a decrease in the death rate of preventable diseases, and that the death rate from the nonpreventable diseases has remained, during this time, stationary. Of course, the encouragement that this chart gives is circumstantial evidence, not conclusive, but it is a mighty good remedy in times of discouragement.

TABLE SHOWING DEATH RATES OF PRINCIPAL PREVENTABLE DISEASES

Death Rate in North Carolina in 1911, 18.3 Per 1000.
Death Rate in North Carolina in 1912, 17.3 Per 1000.

Preventable Diseases	Death Rate	Nonpreventable	Death Rate
Tuberculosis	1911-252.9 1912-234.3	Heart Disease	1911-134.2 1912-135.3
Typhoid Fever	1911- 68.3 1912- 42.0	Cancer	1911- 52.3 1912- 54.3
Diarrheal Diseases	1911-166.1 1912-140.0	Bright's Disease	1911- 98.7 1912-104.1
Contagious Diseases	1911- 82.6 1912 53.4	All Others	1911-970.0 1912-970.0

Immediately Ahead:

There are two State policies the North Carolina Board of Health must adopt and develop if the board takes advantage of its opportunity and discharges its full responsibility in reducing the State's death rate—the sole object, aim, and ultimate measure of intelligent health work.

First, there must be worked out an efficient system of county health work. The relation of the general work of the State Board of Health and the special work of efficient county boards of health in the treatment of diseases of the body politic may be compared to the relation of a tonic and specific in the treatment of the sick individual. The educational work of the State Board of Health and its supervision over intercounty matters and its fostering care over local boards of health has a general remedial effect on the health of the State as a tonic improves the general vitality of a patient. The efficient local board of health is like a specific or local remedy applied directly to the seat of the trouble. The death rate of the State will decline under the influence of a central organization, but, if the death rate of the State is to be reduced to the lowest figure that our power of preventing disease imposes upon responsible and intelligent citizens, then the efficient county board of health is an absolute necessity in State health work.

For the last two or three months and during the next two to four years one of the principal objects of the State Board of Health will be to develop a uniform, efficient and satisfactory system of county health work.

We hope to secure the employment, within the next month or six weeks, by at least ten counties of the State of North Carolina, of a whole time health officer. We then propose, through direct assistance to such counties, to correlate their work and to develop some uniform standard by which the work of county health officers can be graded, and by which those who make distinct progress will be recognized and rewarded for their efficiency.

Second, it is now time for the North Carolina State Board of Health to adopt a definite policy with regard to tuberculosis. Why? Because from now on the efficiency of the North Carolina State Board of Health is going to be accurately and justly measured. When, after the registration law has been in force a year and the death rates of North Carolina are known, the people will require, as they have a perfect right to do, that there shall be a decline in the general and special death rates of this State after a reasonable time. Not to be willing to stand on this platform and to be measured accordingly is not to deserve the confidence of the people of this State. If we fail to reduce the death

rates of North Carolina it not only means that we shall have been weighed in the balances and found wanting, but it will give public health work in North Carolina, and throughout the South, a setback that will take years of work to offset and cost thousands and tens of thousands of human lives. Recognizing, then, our grave responsibility and realizing that it will be absolutely impossible to shun it, even if we desired, we come face to face with this fact: That one-fourth of the opportunity of a board of health to reduce death rates has to do with one disease, namely, tuberculosis, which causes one-fourth of all preventable deaths. It, therefore, follows that it is incumbent upon those entrusted with the responsibility of reducing the death rate to make a distinction in their attitude toward tuberculosis and their attitude toward other diseases comparatively unimportant when measured beside the Great White Plague. One of the lines of advance during the next year for the North Carolina State Board of Health will be directed specifically against tuberculosis. Already plans are in making but as yet not quite mature enough to be turned loose in the world.

If the past in the health work of this State has been encouraging, the possibilities of the future, and the very near future, too, are so masterfully alluring that it is becoming hard for some of us interested in health work to dream and not make dreams our master.

REPORT OF THE DIRECTOR OF THE STATE LABORATORY OF HYGIENE.

C. A. Shore, M.D., Director.

The work of the State Laboratory of Hygiene divides itself into three divisions or lines of work: The examination of specimens, the distribution of diphtheria antitoxin, and the treatment of patients with prophylactic antirabic virus.

The total number of specimens examined was 12,731, as follows:

		Positive.	*Negative.*
1,091	sputum	236	855
660	diphtheria	239	421
790	Widal	299	491
298	rabies	154	144
196	malaria	25	171
78	gonococci	36	42
83	urine.		
39	pathology.		
28	miscellaneous.		

	Positive.	Negative.
7,285 feces	1,849	5,436
Hookworm	1,303	
Ascaris	402	
Hymenolepsis	172	
Strongyloides	32	
Trichocephalus	11	
Oxyuris	8	
Taenia saginata	3	
Balantidium	2	
2,183 water.		

The figures show a considerable decrease in number of hookworm examinations, a few less specimens of water, and a general increase in all other specimens. The Hookworm Commission does more and more of its work in the various counties and during the past year sent very few specimens to the Laboratory and most of the 7,285 specimens examined were sent directly by patient or physician and not by the employees of the Hookworm Commission. Until recently one or more microscopists paid by the Hookworm Commission was constantly at work in the Laboratory, but such is not now the case. If we eliminate the specimens sent by the Hookworm Commission and examined by their representatives the apparent decrease disappears.

A general increase in the number of examinations of sputum, throat swabs, Widal tests, and for malarial parasites and for gonococci show that there has been a very substantial increase in the amount of work done.

The analysis of water of all public supplies whether municipal or from the socalled mineral springs continues to show the wisdom of State supervision. The advertised claims of the therapeutic value of bottled waters are usually extravagant and often absurd, but we found several years ago that many waters on the market were not even clean. We are certainly unassailable in insisting that therapeutic waters should at least be clean and free from intestinal bacteria. It was necessary to publish the names of several which were almost constantly polluted, and such publication was found to be an effectual means of securing an improvement, not only in the worst waters but in all. The improvement has really been very marked. Practically all of the bottled waters, except possibly a few of local distribution only, can now be drunk with assurance of cleanliness. This was far from being the case several years ago.

The classification of our water analyses, shows as in former years, that the open top bucket well is many more times as apt to be polluted as a bored well with pump. We have preached the uncleanliness of

the bucket well by letter and by newspaper in season and out, but the harvest is still truly plenteous.

	Good.	*Bad.*	*Question-able.*	*Total*
Pump wells	237	99	53	289
Bucket wells	67	231	50	348
Wells, not known as to whether provided with bucket or pump	20	31	11	62
Springs, private	30	51	14	95
Springs, mineral	241	27	23	291
City supplies	729	53	136	918
Streams and unknown sources	15	34	7	56
Cisterns	11	3	1	15
Artesian wells—flowing	9	....	....	9
	1,359	529	295	2,183

There is at present a well marked increase in rabies in the State. For several years after the antirabic work was taken up by the State Laboratory of Hygiene the number of animals dying with the disease and the number of persons bitten by rabid animals remained at almost a fixed figure. I believe this had been the case for some years though there is insufficient data on the subject. During the last eighteen months there has been an increase shown in the figures of each month. In the year ending May 31st we examined 298 animals and found 154 of these rabid: Dogs 138, cats 12, cattle 3, and one child. The corresponding totals of the year before were 199 examined and 117 rabid. There has been at the same time an increase in applications for treatment by victims of these animals. In the year just passed 259 were treated, against 195 the year before. We have now treated nearly 900 persons in all and so far have had no fatalities. There was one death from rabies in the State during the past year. This person had had no treatment. The economic loss to the State caused by dogs is appalling and all of it is preventable. Rabies is the one disease that could be abolished by legislative enactment. A law prohibiting the running at large of dogs would stamp it out in two years, except the cases coming over the border from neighboring states. But I think it probable that if we enacted such a law as suggested our superior civilization would be emulated by our neighbors.

The third line of work shows that we have distributed

1,514 1000-units
1,107 3000-units
1,632 5000-units

4,253

diphtheria antitoxin at the reduced contract price, saving to the State the sum of $21,579.55.

We hope to take up at once the manufacture of typhoid vaccine. We intend to distribute this at cost which we believe will be very small. It is not a wild dream to hope that our State will soon be as immune to typhoid fever as it now is to smallpox.

ANNUAL REPORT OF ASSISTANT SECRETARY TO BOARD FOR HOOKWORM DISEASE.

Jno. A. Ferrell, M.D., Assistant Secretary.

Mr. President and Gentlemen:

It gives me pleasure and honor to act as spokesman for the six doctors, eight microscopists and a clerk who have been making history for North Carolina in health work. A more zealous, effective and loyal team has nowhere waged warfare on disease. I wish every member of the force could be here and relate first hand some of their rich experiences in the heart of the eighty counties in which their activities have reached. When a county campaign closes every man, woman and child even in the remotest districts knows the fundamental facts concerning hookworm disease, its cause, treatment and prevention. The dispensary educates the masses and the classes by the demonstrative method of teaching. Living examples of the striking results effected by treatment are left in every community as constant reminders that curing the disease drives away sickness and poverty and brings in its stead health, energy, happiness and prosperity.

Of the one hundred counties in the State eighty have made appropriations for the first round of dispensary campaigns and eight have provided for a second campaign. However, for the figures to be given in this report only the results obtained up to April 1st when the last regular quarterly report was compiled will be considered. At that time seventy-four counties had made the first appropriation, and five the second appropriation. A total of $19,900.59 had been rendered available, an average of $252 for each county. The work had been finished in sixty-five counties at an average cost of $211.55 or 84% of the available county funds. The average length of the campaigns has been 5.8 weeks. The dispensary treated cases have cost the counties on the average 17.5 cents. By including those treated by general practitioners without cost to the counties, the amount is reduced to 14 cents. During 1912 we spent for all agencies a total of $32,636.92 and recorded

57,991 persons treated at an average cost of 56 cents each. The Commission paid 59% of the expenditures and 41% was paid by the State and counties. The amounts were distributed as follows :

Commission	$19,245.56, or a cost of	33⅓ cents per case.
State	5,036.45, or a cost of	8.6 cents per case.
Counties	8,354.91, or a cost of	14.4 cents per case.
Total	$32,636.92, or a cost of	56.1 cents per case.

The last Legislature increased the appropriation for the campaign so that with the increase being made by the counties I think we can confidently say that North Carolina is meeting the Commission half way in advancing the fight for the eradication of the disease and the improvement of sanitary conditions.

The personnel of the district directors has undergone some changes during the past year. Drs. C. L. Prigden, P. W. Covington and G. F. Leonard are still in the service. Drs. C. F. Strosnider and T. E. Hughes resigned the past spring to enter general practice. Their places have been filled by Drs. H. L. Sloan and B. E. Washburn. Dr. W. P. Jacocks joined the service last August. Each physician shoulders the responsibility of selecting his assistant. The doctor is held accountable for results. A weekly summary is made up in the central office and the doctor doing the largest work heads the list. No member of the force cares to be a "tail-ender" very long. The stability and competency of these men is attested by the fact that in no quarterly or annual report sent out by the Commission has North Carolina failed to head the list in the comparative count with the twelve Southern States engaged in the campaign.

The physicians of the State have shown a magnanimous spirit throughout the entire campaign. They have coöperated with us in securing county appropriations, sent patients into the dispensaries, and distributed a large quantity of literature. Up to April 1st approximately three-fourths, or 1,400 of them have made reports of their treated cases which number 44,354 persons.

The public school forces have consistently figured in the work. From the able State Superintendent down the list including the county superintendent and the timid first-term girl teacher, their work has been courageous, tireless and effective.

Two incidental features of the work have been the making of preliminary infection and sanitary surveys by counties. The infection survey is based upon the examination of a minimum of two hundred rural children ages six and eighteen years inclusive. Such surveys are com-

plete for sixty-four counties in each of which on the average 978 children were examined, or a total of 62,338 children of whom 28,852 or 46% were found infected. The sanitary survey is based upon the sanitary inspection of a minimum of one hundred farm homes in a county. These surveys have been made for seventy-four counties averaging 394 homes to the county. Of the 29,170 farm homes inspected 15,436 or 52% have no kind of a privy.

The full results of the three years campaign cannot be accurately determined. Indirectly it has meant considerable in creating a broader and deeper interest in general health work. Directly it has provided treatment for 122,655 infected persons who have been benefited in health and helped to a better scale of living, at the average cost of 56 cents for each person. Of these 44,354 persons were treated by private physicians and 78,302 by members of our staff. The number of microscopic examinations made rather than the number of treated persons affords the best index to the growth of the work. However, the growth in both has been rapid and significant as the following figures will indicate:

	1910	1911	1912
Microscopic examinations	7,949	37,328	135,867
Persons treated	8,000	45,881	57,991

In many counties more than one-third of the entire population has been examined and it is not unusual to examine every fifth person. In fact, we have already examined 216,616 persons or practically every tenth inhabitant in the entire State and approximately every twentieth person has been treated. About one-half of the campaign expenses are now paid by the State and the counties.

The work accomplished stands as the best evidence that every organized agency has been active in rendering assistance. The doctors, teachers, editors, influential farmers, business men, bankers and their wives have taken a hand in the work. County commissioners have heard the appeal for those in need and rendered possible this grand free work. The story for North Carolina is in a general way the story for each of the twelve Southern States which are carrying on this work. Already we can see that this manifestation of interest in the eradication of a single disease is but a beginning of a great health wave destined to sweep over the South and leave it a clean and healthful Eden, a prosperous and attractive region in which to live.

Adoption of reports of Dr. Rankin, Dr. Ferrell, and Dr. Shore.

Dr. W. S. Rankin: The State law in regard to the personnel of the State Board of Health has this to say (section 1, chapter 62): The Medical Society of the State of North Carolina shall choose from its members by ballot four members and the Governor of the State shall appoint five other persons (one of whom shall be sanitary engineer), and they shall constitute the North Carolina Board of Health.

Section 2, chapter 62, says that "The members of the board of health elected by the State Medical Society shall be chosen to serve for six years. Their term of office shall begin immediately upon the expiration of the meeting at which they were elected. Those appointed by the Governor shall serve for six years, their term of office beginning with the first regular meeting of the board after their appointment."

Section 7 of the same chapter says "The meetings of the State Board of Health for the election of officers shall be on the second day of the annual meeting of the Medical Society of the State of North Carolina in the year 1901 and every six years thereater."

There are now two vacancies existing on the State Board of Health, the vacancy made by the retirement of Dr. Ashcraft, and the vacancy caused by the retirement of Dr. Tayloe.

Dr. L. B. McBrayer: At the election two years ago we had considerable confusion from the fact that we voted to fill two vacancies at once. To prevent any trouble and to expedite business I move that we fill the vacancies one at a time.

Motion seconded by Dr. Richard H. Lewis and carried.

Dr. J. Howell Way: Nominations are now in order to fill the vacancy caused by the expiration of the term of Dr. Ashcraft.

Dr. J. E. Ashcraft nominated by Dr. R. L. Gibbon, Charlotte.

Dr. I. W. Faison nominated by Dr. E. Reid Russell; seconded by Dr. A. J. Crowell, Charlotte.

Dr. Oscar McMullan nominated by Dr. John T. Burrus, High Point; seconded by Dr. W. C. Gallaway, Wilmington.

Dr. A. A. Kent, of Lenoir, nominated by Dr. J. T. J. Battle, Greensboro; seconded by Dr. Richard H. Lewis and Dr. L. B. McBrayer.

Dr. Oscar McMullan's name withdrawn from nomination and placed in nomination to fill the place held by Dr. Tayloe.

Dr. Way announces the ballot—Ashcraft, 14; Faison, 38; Kent, 88.

Dr. A. A. Kent, of Lenoir, having received a majority of the votes cast is elected to fill the vacancy caused by the retirement of Dr. Ashcraft.

Dr. Way, *President:* Nominations are now in order to fill the vacancy caused by the expiration of the term of Dr. David T. Tayloe.

Dr. Oscar McMullan nominated by Dr. John T. Burrus, High Point; seconded by Dr. R. H. Lewis.

Dr. Cyrus Thompson nominated by Dr. Albert Anderson, Raleigh; seconded by Dr. H. D. Stewart, of Monroe, and Dr. G. T. Sikes, of Grissom.

Ballot—McMullan, 56; Thompson, 80. Dr. Thompson elected.

Dr. Way: I announce to the members of the State Medical Society and the State Board of Health the election of Dr. A. A. Kent, of Lenoir, as a member of the State Board of Health for a term of six years to fill the vacancy caused by the retirement of Dr. J. E. Ashcraft, of Monroe; and the election for a like term of Dr. Cyrus Thompson, of Jacksonville, to fill the vacancy caused by the retirement of Dr. David T. Tayloe, of Washington.

I also announce to you gentlemen of the Conjoint Session the appointment recently by Gov. Locke Craig of Dr. Richard H. Lewis, of Raleigh, to succeed himself as a member of the State Board of Health for a term of six years, and in addition the Governor's designation for a like term of service on the Board of Dr. Edward J. Wood, of Wilmington, succeeding to the vacancy occasioned by the expiration of the term of Dr. E. C. Register, of Charlotte.

Dr. W. S. Rankin: There are two citizens of North Carolina who have done work in which this Society is deeply interested, who have been active in working for all health measures. These gentlemen are Hon. John M. Faison and Hon. Edward W. Pou, who have been active in the National Congress, and I think it would be a graceful act to give these men a vote of thanks for their activity in behalf of public health. I move that we extend a vote of thanks to these gentlemen.

Motion seconded by Dr. G. T. Sikes and Dr. W. C. Whitfield. Carried.

Dr. A. A. Kent: Fellow members of the North Carolina Medical Society, you must well know that I have no speech to make to you on this occasion, because the thought of being elected a member of the State Board of Health was absolutely foreign to my mind until this morning. I had no idea that anyone had me in mind for that position, so I have no speech of thanks prepared. But I do want to say that I thank you from the bottom of my heart for the evidence of confidence in me as shown by the vote given me this morning, and I pledge you

that in my service on the State Board of Health North Carolina shall have the best that is in me. That is all I have to say.

Dr. Cyrus Thompson: Mr. President and members of the State Medical Society, I am indeed in a very unusual condition. Ordinarily I am not averse to talking and yet there come times when a man does not know what to say. It is said that a fall from a housetop does not hurt a man at all: the hurt is caused by the sudden stop. This honor is very sudden to me; and while it does not hurt me, like the Irishman's stop from the housetop, it well nigh knocks me "spaichless."

I came here with no more expectation that the Society would bestow this honor upon me than I have of going to heaven before I die. But man, and especially a doctor, lives frequently in a condition of uncertainty, and I must not complain. Indeed, during the lives of our patients, our dead certainties are few. And sometimes the doctor does not know what will happen or where he is going. I was down the railroad on a call one day and drove out into the country from the station. Coming on back to meet the train, the weather was hot, the sand was deep, and the mule was slow. I saw in calling distance a log train going by; and, fearing I should miss my train, I got the engineer to take me on his "loky." I remember it with the distinctness of a vision. As we went rumbling and creaking up hill and down hill and over ravines and tottering trestles, the log cars came in winding pursuit of us like bundles of huge, scaly serpents. The ride was what a nervous man would have called fierce. The engineer, seeing that I was enjoying in serious silence the serenity of an intense and uncertain calm, asked me where I was going. I said, "I don't know; I am going to Heaven or Folkestone—I don't know which."

Mr. President, I never bother myself much about where I am going or what is to become of me. I take the thing quietly. The philosophy of an equable and happy life, the real helpful life withal, lies in the right use of the everlasting Now. Dr. Osler said recently to the Yale students the wisest thing ever said for the happiness of mortal man. He said, "Every man can carry the burdens of today, but no man can take the burdens of yesterday and the burdens of tomorrow and carry them along with the burdens of today." This is but a new rendering of the Scriptural quotation, "Take therefore no thought for the morrow; for the morrow shall take thought for the things of itself. Sufficient unto the day is the evil thereof." And sufficient also should be our joys.

If I had been defeated, I should have this same equanimity, the more especially so if I had been defeated by my friend, Oscar McMullan. In that event I should have had no sort of regrets. For many years

he has been my friend and I take him as one of my precious own, and know for a certainty that he is one of God's elect.

This thing satisfies me *some*. Mr. President, I want to say that I thank all of you sincerely for this honor out of the bottom of my heart. I had no expectation of it, as I have said; but if there was any gift the Society would give me, this is the only one I could have desired. I have no desire ever to be your Secretary or your President; but I do desire, whether in public office or as a private individual, to advance the welare of all the people of the State of North Carolina, and to teach the folks health and to build up the one greatest asset of any nation. I have never done less than my very best in any position in which I have been put. I desire to be serviceable in the world. So I thank you one and all, and pledge you my very best service in this new work.

Dr. Way: Is there no other business to come before this Conjoint Session of the State Medical Society and the State Board of Health? If not I declare this meeting adjourned.

Notice to County Societies:

1. The annual election of officers should be held in December.

2. The 1914 dues should be paid at the December, 1913, meeting, or at any rate before January 1, 1914.

3. Any error in the matter of names, initials, year licensed, college attended, etc., should be reported to the Secretary. The information recorded is that sent in by the individual doctors, the secretaries of the county societies, or taken from the Transactions of former years.

4. The recent meeting of the Society changed the by-laws so that the secretaries of county societies are required to make their report to the Secretary of the State Society of membership and dues not later than January 31. The members should pay promptly so that he can carry out his responsibility.

HOUSE OF DELEGATES

Proceedings of the House of Delegates

Meeting called to order by President J. P. Munroe.

A roll call by districts showed the following delegates or alternates present:

First District:

Currituck—W. T. Griggs.
Camden-Pasquotank-Dare—Oscar McMullan.
Perquimans-Chowan—H. M. S. Cason.
Washington-Tyrrell—B. F. Halsey.
Nominating Committee—B. F. Halsey.

Second District:

Martin—M. I. Fleming.
Pitt—J. E. Nobles.
Beaufort—J. G. Blount.
Lenoir—Albert D. Parrott.
Craven—J. F. Rhem.
Pamlico—Geo. S. Atmore.
Carteret—K. P. B. Bonner.
Nominating Committee—J. G. Blount

Third District:

New Hanoveer—C. T. Harper.
Onslow—Cyrus Thompson.
Duplin—R. L. Carr.
Bladen—L. B. Evans.
Sampson—R. B. Wilson.
Columbus—Leman Baggett.
Brunswick—J. Arthur Dosher.
Nominating Committee—C. T. Harper.

Fourth District

Northampton—M. Bolton.
Halifax—F. M. Register.
Edgecombe—W. W. Green.
Johnston—L. D. Wharton.
Wilson—E. T. Dickinson.
Wayne—J. R. Parker.
Nominating Committee—M. M. Saliba.

Fifth Fistrict:

Robeson—B. F. McMillan.
Scotland—P. John.
Lee—W. A. Monroe.
Moore—M. L. Matthews.
Harnett—J. W. Halford.
Chatham—L. E. Farthing.
Nominating Committee—J. W. Halford.

Sixth District

Wake—R. H. Lewis, C. O. Abernethy.
Vance—F. R. Harris.
Granville—G. T. Sikes.
Person—R. S. Baynes.
Orange—I. H. Manning.
Durham—Lyle S. Booker.
Nominating Committee—F. R. Harris.

Seventh District:

Union—H. D. Stewart.
Mecklenburg—I. W. Faison, C. A. Misenheimer, J. R. Irwin.
Gaston—J. A. Anderson.
Rutherford—Henry Norris.
Nominating Committee—I. W. Faison.

Eighth District

Rockingham—John Sweeney.
Guilford—J. W. Long, D. A. Stanton.
Randolph—Tom Fox.
Forsyth—E. F. Strickland.
Stokes—R. G. Tuttle.
Surry—J. W. Ring.
Nominating Committee—J. W. Long.

Ninth District:

Davidson—D. J. Hill.
Caldwell—A. A. Kent.
Rowan—J. E. Stokes.
Iredell-Alexander—T. E. Anderson.
Burke—I. Taylor.
Nominating Committee—A. A. Kent.

Tenth District:

Buncombe—C. S. Jordan, L. B. McBrayer, W. L. Dunn.
Henderson-Polk—L. B. Morse.
Haywood—J. Howell Way.
Nominating Committee—J. Howell Way.

REPORT OF THE SECRETARY.

Mr. President and Gentlemen:

Your Secretary desires to report as follows:

Status of the Society's Property:

The Society's property consists of a trunk and the following copies of the Transactions: Two volumes covering the meetings through 1858 and a copy for each of the following years: '84, '88, '91, '92, '94, '95, '96, '97, '98, '99 1900, 1901, '02, '03, '04, '05, '06, '07, '09, '11, and '12.

There are also a few printed copies of constitution and by-laws for State and county societies, a registration book which has been rebound, and a quantity of printed notification forms.

Some steps should be taken to obtain copies of the Transactions for the

meetings of the Society between the years of '58 and '84 and the more recent years for which we have no record.

Status of the Society's Membership:

Where the policy which has been pursued in making reports and paying assessments by county societies is considered and where no specified time is adopted for closing up a year's business, I think any statement as to the number of members in the State Society is only approximate. Moreover, since the county assessments come in during any month of the year and collections for one year may be used for paying indebtedness incurred in a previous year it seems to me that the financial standing of the society is even more indefinite.

As the membership of the State Society is regulated by the membership in the county societies, we naturally look over the records of the county societies. It would seem that societies have been organized for ninety-four counties. A number of these have had no record in the transactions in five years or longer. A much larger number have been irregular, appearing one year and not the next. In many counties there has been no regular meeting since the date of organization. However, the dues have been collected and sent in. Five letters to the last recorded officers of some societies asking for reports have brought no response and yet the letters were not returned as undelivered. Counties like Anson, Catawba, Halifax, Jackson, Macon-Clay, Orange, Nash, Northampton, Stokes, Pitt, Richmond, Wayne, and other counties have been appearing irregularly or not at all, and yet each county named might have an active, useful, and responsive society.

For the present year dues have been received from 82 component societies representing 89 counties, 1,085 paid members, and 46 Honorary Fellows, a total of 1,133 members. A few of the county societies have met, reorganized, collected, and remitted dues, which have not been reporting.

Your Secretary has sent out to the seventeen hundred physicians of the State without mailing expense to the Society the following: 1,700 letter inserts calling attention to the value of membership in the State Society, 1,000 copies of the Bulletin of the American Medical Association, giving the recommendations of the Conference of Secretaries of the various State societies for improving and unifying the business of the society. Seventeen hundred preliminary bulletins of this meeting and as many of the final programs have been mailed to the physicians outside the Society as well as to those in the Society. Every doctor in the State should be convinced that the State Society stands for something, that it does things, and that aside from the value of the Transactions it is of distinct benefit to every reputable doctor. As the Society becomes of more material value to the individual doctor the list of members will grow until we have all who are desirable.

Status of this Session:

Your Secretary came into possession of no records of the business of the 1912 meeting, the officers of county or State societies, delegates or committees until the Transactions were printed, about April 1. Since December, when county elections were supposed to be held, repeated efforts have been made to secure a list of members, officers, delegates, etc., from county societies for 1913. It would seem that it is customary to make reports during any month of the year.

Program:

The program is made up almost exclusively of papers secured by the chairmen of the sections. The chairmen of the sections on Medical Jurisprudence and State Medicine, Diseases of Children, Materia Medica and Therapeutics, and Pathology and Microscopy, were reminded two or three times of their duty without results. The Secretary secured a few papers, but not many, for fear of crowding the program. I trust every physician who has prepared a paper will have ample opportunity to read it and have it discussed.

Your Secretary has had prepared a card index for keeping a record of the physicians of the State. Two lists contain 1,700 names each. One is a list alphabetically by names, the second is a list alphabetically by counties. The third is an alphabetical list by counties of those doctors in good standing. The latter today contains only 1,133 names. It is to be hoped that the delinquents will settle promptly in the future and increase the list to twelve hundred names.

The Transactions:

Competitive bids have been received from the leading printing houses of the State. Edwards & Broughton Printing Company, of Raleigh, making the lowest bid, has been awarded the contract. Sixty days will be allowed in which to complete and deliver the bound volumes after the copy is released. A forfeit of five dollars for each day of delay is provided for in the contract.

Recommendations.

Your Secretary recommends:

1. That the fiscal year coincide with the calendar year in all parts of the organization.

2. That dues in county societies be made payable on January 1 of each year, and that membership drops automatically December 31 until dues are paid.

3. That county secretaries be required to report to the State Secretary all members in good standing, together with their per capita assessments for the current year not later than January 31.

4. That action be taken looking toward the adoption of provisions for medical defense and a committee be named to draft suitable provisions, machinery, etc., to be adopted by the Society one year hence. This should also relieve the county society of prosecuting quacks and have it done by the State Society through a special attorney.

5. That a committee be named to collect the necessary copies of the Transactions for the years above mentioned, and to make arrangements for locating a complete set in the State Library, the State University Library, and such other libraries in the State as may afford students of history opportunity to obtain facts concerning the profession.

6. That provisions be made for securing a suitable record book for recording detailed information concerning each physician in the State for at least the past ten years and allowing space for future years. Further recommendation is made that special provision be made for having the information for back years compiled so that no question may arise as to a physician's present or past standing, nor will there be uncertainty as to when a physician should be made an honorary member.

7. That more attention be devoted to memorials of physicians who have made their State, county, and community better by living in them.

8. That a detailed list be printed in the Transactions of names and respective amounts for persons paying money to the Treasurer, and that a similar list be printed for funds disbursed. This will entail some extra work on the Treasurer and the Secretary, but it will satisfy quite a number of members and comply with the resolution introduced in the House of Delegates at Hendersonville by Dr. G. T. Sikes.

9. That in bestowing honors and making honorable mention in the Transactions special consideration should be given to those physicians who exert themselves in making their county society alert, active, and responsive.

10. That at each annual meeting the county secretaries be assigned a period for discussing ways and means for stimulating and keeping effective the county societies, the collection of dues, submitting of reports, and attending to the various other matters of business.

The following report of the committee of the Texas Medical Association relative to medical defense was appended to the report of the Secretary. He also referred to *Bulletin of American Medical Association,* November 15, 1908, and *Journal* of March 22, 1913, page 928.

REPORT OF COMMITTEE ON MEDICAL DEFENSE.

Your Committee on Medical Defense begs to submit the following report:

In order that the new members of the House of Delegates may fully understand the report of this committee, it is necessary to briefly refer to the report of the Medical Defense Committee at our last annual meeting. (See June number of *State Journal*, 1912.) The present chairman of this committee, who was also chairman of the committee last year, confined the work of that committee to investigating the extent of the malpractice suit "industry" in Texas; and we respectfully refer you to that report. That committee doubtless was ignorant of the value of its report to your present committee. That committee found to what extent the evil existed. Your present committee extended its efforts in trying to find the best method to deal with malpractice suits. With this in view, your committee mailed the following circular letter to the secretaries of every State medical association in the United States:

Secretary State Medical Association.

Dear Doctor: The Texas State Medical Association is now considering adopting a Medical Defense for its membership, and if you will answer the following questions, and send me a copy of your by-laws covering Medical Defense Plan in your Society (if you have it), we will appreciate the favor.

(1) Have you a Medical Defense in connection with your Association?

(2) If so, how long since your Association established same?

(3) Did it affect temporarily or permanently the membership of the Association?

(4) How many members did you lose from it, and have you regained them?

(5) Has it caused a decrease in number of suits filed, won or lost for malpractice?

(6) What is the per capita cost to sustain your Medical Defense?

(7) What is the membership of your Society?

(8) Does your Society consider it an advantage?

Thanking you sincerely for a prompt reply, I am

Fraternally yours,

.....

We received replies from forty-three States, and eighteen of these replies were from States that had adopted Medical Defense.

We quote the following remarks from one of the larger States where the plan has been very successful:

First, "that nearly fifty per cent of alleged malpractice cases resulted from the treatment of fractures or dislocations.

Second, "In nearly all instances where suit is brought, or threatened, some physician has encouraged such suit by a careless expression of disapproval of the treatment given the patient.

Third, "That one suit leads to another. Several of our cases appear to have resulted from other prosecutions against physicians not members of our Society."

The general opinion, with only two exceptions, is that Medical Defense is a distinct advantage. Of the two exceptions, one is a small society with hardly five hundred members, and the secretary admits that it is a big proposition for a small society. The other states there is a move on foot to abolish Medical Defense with only a year's trial. They will probably make a mistake if they abolish it without further trial, for our correspondence shows that where it has existed for more than two years, there is a net gain in membership, members are more prompt in paying their dues, and it prevents damage suits being filed.

Practically all the suits are won by the physician and the society, and in one State where it has existed for a period of eight years the physicians are rapidly dropping their commercial liability insurance. In one State where they have had Medical Defense for eight years, they have lost one suit and won 198.

The report of this committee would hardly be complete without taking the report from individual States separately, but time and space will not permit. We present, however, the following condensed table of statistics from each State, which will enable you to decide the question as to whether or not our Society wants to establish Medical Defense for its membership:

	Defense.	Years. How Long?	Members Lost.	Members Gained.	Suits Won.	Suits Lost.	Suits Decreased.	Per Capita Cost.	Advantage?	Disadvantage?	Membership.
Kansas	Yes	2	None	------	D. K.	D. K.	D. K.	$1.00	Yes	No	1,500
Pennsylvania	Yes	8	None	Yes	15	None	D. K.	.25	Yes	No	5,985
Mississippi	Yes	1	Yes	------	D. K.	D. K.	D. K.	1.00	------	------	977
New York	Yes	11	None	Yes	*	--------	No	.65	Yes	No	7,200
Michigan	Yes	4	None	200	D. K.	D. K.	D. K.	1.00	Yes	No	2,200
New Jersey	Yes	2	None	Yes	D. K.	D. K.	Yes	Assess-ment.	Yes	No	1,500
Illinois	Yes	8	None	Yes	198	1	Yes	1.00	Yes	No	5,750
Vermont	Yes	2	90	45	D. K.	D. K.	D. K.	2.00	?	------	400
Maryland	Yes	8	None	Yes	Yes	Der.	Yes	Dues	Yes	No	1,078
California	Yes	4	None	Yes	Yes	Der.	Yes	1.00	Yes	No	2,278
Missouri	Yes	3	None	Yes	All	None	Yes	Dues	Yes	No	3,000
Minnesota	Yes	3	None	------	All	None	D. K.	1.00	Yes	No	1,413
Wisconsin	Yes	4	None	No	All	None	Yes	1.00	Yes	No	1,700
Iowa	Yes	6	None	Yes	Yes	Der.	D. K.	1.00	Yes	No	2,000
Indiana	Yes	1	None	Yes	Yes	D. K.	D. K.	.75	Yes	No	2,500
W. Virginia	Yes	3	50	50	No	No	No	1.00	Yes	No	841
Nebraska	Yes	3	None	Yes	Yes	None	D. K.	1.00	Yes	No	966
Kentucky	Yes	5	None	Yes	All	None	Yes	1.00	Yes	No	2,200

*Many previously. Over 300 decided.

Your committee has collected much valuable data, and while we are unable to incorporate same in this report, we will gladly turn our correspondence over to our successors, or to the Secretary of the State Society.

In summing up the Medical Defense question, we have come to the following conclusions:

1. That medical defense for a society of less than one thousand members might prove a burden. However, two out of three with less than one thousand members, having adopted the plan, state that it is an advantage.

2. All societies with more than one thousand members are unanimously in favor of the plan, and many show a great increase in membership. Our Society has a membership of about three thousand, and from statistics we believe the plan would be very successful. We heartily recommend its adoption.

Respectfully submitted,

.....

.....

Committee.

Report of Secretary received and adopted, and his suggestions and recommendations taken up *seratim*. First and second recommendations adopted. Third recommendation, to move up date on which the secre-

taries of the county societies shall furnish reports to the Secretary of the State Society placed on the table until the following day, at which time it was adopted and the by-laws changed.

Fourth recommendation adopted—for the appointment of a committee to investigate the machinery used in all the different States with a view to incorporating the good points in what is proposed for North Carolina. Committee to be appointed by the chair.

Fifth recommendation adopted, committee to be appointed by the chair.

Sixth recommendation adopted, committee to be appointed by the chair.

Suggestions seven, eight, nine, and ten adopted.

The Secretary's report adopted as a whole, except as it relates to the amendment of the by-laws.

Report of the Treasurer adopted.

Report of the Board of Councilors adopted.

Orange and Durham County societies given permission to unite.

TREASURER'S REPORT.

Amount on hand June 18, 1912		$1,372.01
Amount collected since above date to 1913	$430.00	
Amount collected from members as per above list for 1913 to date	2,230.00	
Interest to January 1, 1913	34.31	
Receipts from exhibit space at Morehead City	120.00	
Amount collected since June 18, 1912		2,814.31
Total amount		$4,186.32
Total amount expended as per attached list since June 18, 1912, to date		3,009.86
Balance on hand July 1, 1913		$1,176.46

H. D. Walker,
Treasurer.

The following bills have been allowed and paid during the past year:

June 1, 1912.

To Enterprise Printing Co., High Point, N. C., 750 programs		$12.50
Approved: A. A. Kent, President. D. A. Stanton, Secretary.		

June 22, 1912.

To H. D. Walker, Treasurer, to services as Treasurer	$150.00	
Letter files, stationery, express, and stamps	20.25	170.25
Approved: A. A. Kent, President. D. A. Stanton, Secretary.		

July 1, 1912.

To Miss Sadie M. Smathers, Hendersonville, N. C., services reporting proceedings of House of Delegates at Hendersonville, June 18-20		$10.00

Approved: J. P. Munroe, President.
D. A. Stanton, Secretary.

July 9, 1912.

To David A. Stanton, M.D., High Point, N. C., services rendered one year as Secretary	$300.00	
Miss Lamb's board at Hendersonville	10.50	
Postage, express, etc	62.24	372.74

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

August 1, 1912.

To Enterprise Printing Co., High Point N. C., to programs		18.00

Approved: J. P. Munroe, President.
D. A. Stanton, Secretary.

August 7, 1912.

To E. M. Uzzell & Co., Printers, Raleigh, N. C.:		
To 4,000 letter heads, J. P. Munroe, President; H. D. Walker, Treasurer; Jno. A. Ferrell, Secretary	$11.00	
3,000 envelopes for President, Secretary, and Treasurer	6.75	
500 blank vouchers	2.00	19.75

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

August 22, 1912.

To E. M. Uzzell & Co., Printers, Raleigh, N. C., to 2,000 letter inserts, "The Advantages to the Doctor of Membership in the State Medical Society"		3.00

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

August 31, 1912.

To Dr. R. O. Dees, Greensboro, N. C., Councilor Eighth District.		
January—Letters to secretaries and stenographer	$1.26	
February—Letters to doctors for papers	1.28	
March—For mailing programs and stenographer	3.02	
Telegrams	.70	
April—North Wilkesboro meeting, railroad fare	5.20	11.46

Approved: J. P. Munroe, President.
D. A. Stanton, Secretary.

September 19, 1912.

To Miss Ida Lamb, Charlotte, N. C.:		
To reporting the Fifty-ninth Annual Session of the Society—to services	$80.00	
To railroad and Pullman fare and other expenses	11.00	91.00

Approved: J. P. Munroe, President.
D. A. Stanton, Secretary.

October 11, 1912.

To Mary W. Gallop, Elizabeth City, N. C., to copying list of paid members of Medical Society..... $6.00

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

October 28, 1912.

To Mrs. Marshall Williams, Faison, N. C. Statement dated October 17, 1912, approved by Dr. J. Howell Way, Dr. Richard H. Lewis, and Dr. Henry T. Bahnson, committee, for the following items:

Oil portrait, Dr. Murphy.....	$100.00	
Gold frame	35.00	
Name plate	1.85	137.85

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

December 21, 1912.

To Raleigh Advertising and Letter Writing Co., Raleigh, N. C., 200 29-line circular letters..... 2.05

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

December 23, 1912.

To W. G. Briggs, Postmaster, Raleigh, N. C., to 250 2-cent stamps 5.00

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

March 20, 1913.

To Dr. A. A. Kent, Lenoir, N. C., to 1,050 steel engravings for Transactions 50.00

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

April 3, 1913.

To Dr. D. A. Stanton, High Point, N. C., to postage and express on Transactions 1912..... 12.82

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

April 8, 1913.

To Raleigh Advertising and Letter Writing Co., Raleigh, N. C., 200 29-line circular letters..... 2.05

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

April 29, 1913.

To B. R. Cates, Manager Observer Printing House, Charlotte, N. C., to postage on 1,000 volumes Transactions.. 230.00

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

May 6, 1913.

To The Observer Printing House, Charlotte, N. C.:

To one drawing and cut diagram	$4.00	
To one thousand Transactions	1,067.20	
To express from Philadelphia	1.00	
To plates for cover	8.50	
To 20 extra copies Transactions	15.00	
To postage on 20 copies	4.60	$1,100.30

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

April 30, 1913.

To Dr. L. B. McBrayer, Secretary Committee on Public Policy and Legislation, Asheville, N. C.:

To printing 425 circular letters	$6.25	
Postage	9.32	
Stenographer	10.00	
Expense meeting committee, High Point	14.00	
Expense meeting committee, Raleigh	19.05	61.62

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

June 1, 1913.

To John L. Wells, Job Printer, to one thousand receipts for the Treasurer 3.00

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

June 4, 1913.

To E. M. Uzzell & Co., Raleigh, N. C.:

To 1,000 letter heads, blotter pads	$4.00	
1,000 report sheets to Treasurer	4.00	
1,000 sheets, report to Secretary	6.00	
Printing 500 letters—Commercial Exhibit	2.00	
Printing diagram on 500 letters—Commercial Exhibit	2.00	
Making diagram Morehead hotel	4.32	
2,000 6¾ envelopes	4.50	
500 postal cards—"Certify that Dr"	6.50	
2,000 letter heads, 20 lb. Japan Bond	5.50	
2,000 preliminary programs	31.25	70.07

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

June 21, 1913.

To Raleigh Advertising and Letter Writing Co., Raleigh, N. C., to 100 19-line circular letters 1.25

Approved: J. P. Munroe, President.
Jno. A. Ferrell, Secretary.

June 24, 1913.

To Willis G. Briggs, Postmaster, Raleigh, N. C., to stamps. 20.00

Approved: J. M. Parrott, President.
Jno. A. Ferrell, Secretary.

June 24, 1913.

To E. R. Carroll, Raleigh, N. C.:

To services of Miss Gunter as stenographer, Morehead meeting	$12.50	
Expenses, railroad fare	9.00	$21.50

Approved: J. M. Parrott, President.
Jno. A. Ferrell, Secretary.

June 24, 1913.

To B. F. Royal, Morehead City, N. C., cash advanced for services Miss Williford, attending the registration book, Morehead City, N. C. 1.50

Approved: J. M. Parrott, President.
Jno. A. Ferrell, Secretary.

June 24, 1913.

To one year's services as Treasurer of Medical Society of State of North Carolina 150.00

Approved: James M. Parrott, President.
Jno. A. Ferrell, Secretary.

June 24, 1913.

To E. M. Uzzell & Co., Raleigh, N. C.:

To 2,000 programs Society meeting	$28.00	
100 delegates silk badges	3.80	
25 councilors' badges	1.25	
3,000 membership directory cards	6.00	39.05

Approved: James M. Parrott, President.
Jno. A. Ferrell, Secretary.

June 24, 1913.

To Jno. A. Ferrell Raleigh, N. C., to one year's services as Secretary of Society 300.00

Approved: James M. Parrott, President.
Jno. A. Ferrell, Secretary.

June 24, 1913.

To Jno. A. Ferrell, Raleigh, N. C.:

To cash advanced to Atlantic Hotel, 4¾ days for Miss Mary Robinson	$14.25	
4¾ days for Miss Gertrude Gunter	14.25	
2 meals Miss Williford	1.50	30.00

Approved: James M. Parrott, President.
Jno. A. Ferrell, Secretary.

June 25, 1913.

To Miss Mary Robinson, Raleigh, N. C.:

To reporting four days at $10 per day	$40.00	
Railroad fare, Pullman, and incidentals	9.60	
Typewriting and clerical work, 3 days at $2.50 per day	7.50	57.10

Approved: James M. Parrott, President.
Jno. A. Ferrell, Secretary.

Total amount expended to date—July 1, 1913 ..... $3,009.86

Received from County Medical Societies.

County	Paid Members	Honorary	Amount
Alamance	9	2	$ 18.00
Anson	7	1	14.00
Beaufort	14	--------	32.00
Bertie	2	--------	8.00
Bladen	5	--------	10.00
Brunswick	5	--------	10.00
Burke	13	--------	28.00
Buncombe	64	5	128.00
Cabarrus	16	3	32.00
Caldwell	12	--------	24.00
Carteret	6	--------	12.00
Caswell	1	--------	2.00
Chatham	14	--------	28.00
Cherokee	8	--------	16.00
Cleveland	15	--------	30.00
Columbus	12	--------	24.00
Craven	16	2	34.00
Cumberland	22	1	44.00
Currituck	4	--------	8.00
Chowan-Perquimans	7	1	14.00
Davidson	13	--------	26.00
Duplin	9	--------	34.00
Durham	31	1	62.00
Edgecombe	9	2	18.00
Franklin	10	--------	20.00
Forsyth	31	2	62.00
Gaston	30	--------	60.00
Greene	5	--------	10.00
Granville	12	--------	26.00
Guilford	57	2	114.00
Halifax	11	--------	32.00
Harnett	7	--------	17.00
Henderson-Polk	11	--------	22.00
Haywood	13	--------	26.00
Hertford	8	--------	16.00
Hyde	7	--------	14.00
Iredell-Alexander	8	1	24.00
Jackson	2	--------	4.00
Johnston	17	1	34.00
Lenoir	7	2	20.00
Lincoln	12	--------	24.00
Madison	7	--------	14.00
Mecklenburg	62	1	$ 124.00
Mitchell-Watauga-Avery	4	--------	8.00
Montgomery	8	--------	16.00
Martin	13	--------	26.00
McDowell	6	--------	12.00
Moore	13	--------	26.00
Lee	7	--------	14.00
New Hanover	22	9	44.00
Northampton	12	--------	26.00
Orange	8	--------	16.00
Onslow	11	1	22.00
Pamlico	5	--------	10.00
Pender	2	--------	4.00
Person	11	--------	22.00
Pasquotank-Camden Dare	13	--------	26.00
Pitt	9	--------	18.00
Randolph	7	--------	14.00
Robeson	35	--------	70.00
Rockingham	18	--------	36.00
Rowan	19	4	38.00
Rutherford	19	--------	38.00
Sampson	12	--------	24.00
Scotland	10	1	20.00
Stanly	11	--------	22.00
Stokes	6	1	12.00
Surry	19	--------	38.00
Transylvania	6	--------	12.00
Union	17	--------	40.00
Vance	11	--------	24.00
Wake	38	3	76.00
Warren	5	--------	10.00
Washington-Tyrrell	11	--------	26.00
Wayne	19	--------	38.00
Wilson	17	--------	34.00
Wilkes	9	--------	18.00
Yadkin	7	--------	14.00
County Societies reported, 78	1,081		

Amount collected from members for 1913 ... $ 2,230.00

Annual Dues Paid to the North Carolina Medical Society by Members for the Year 1913.

ALAMANCE COUNTY MEDICAL SOCIETY

Goley, Wm. R.	$ 2.00
Walker, L. A.	2.00
Anderson, C. A.	2.00
Faucette, Thos. S.	2.00
Stafford, W. G.	2.00
McPherson, Jno. W.	2.00
Walker, Walter E.	2.00
Walters, C. M.	2.00
Moser, W. D.	2.00
	$ 18.00

Honorary:—R. A. Freeman.
Geo. W. Long.

ANSON COUNTY MEDICAL SOCIETY

Dunlap, J. M.	$ 2.00
Covington, Jas. M., Jr.	2.00
Kerr, J. E.	2.00
Ross, R. D.	2.00
Gunter, J. B.	2.00
Chapman, Geo. M.	2.00
Shellum, Oliver W.	2.00
	$ 14.00

Honorary:—T. F. Meisenheimer.

BEAUFORT COUNTY MEDICAL SOCIETY

Nicholson, P. A.	$ 2.00
Hardy, Ira M., 1912-1913	4.00
Blount, J. G.	2.00
Hunter, H. H.	2.00
Kellum, W. D.	2.00
Nicholson, S. T., 1912-1913	4.00
Rodman, John C.	2.00
Tayloe, D.T.	2.00
Tayloe, Armistead K.	2.00
Nicholson, J. T.	2.00
Carter, H. W.	2.00
Windley, C. T.	2.00
Potter, W. T.	2.00
Hoyt, A. C.	2.00
	$ 32.00

BERTIE COUNTY MEDICAL SOCIETY

Pritchard, J. L.	$ 2.00
Sawyer, C. J., 1911-1912-1913	6.00
	$ 8.00

BLADEN COUNTY MEDICAL SOCIETY

Clark, Geo. L.	$ 2.00
Robinson, Newton	2.00
Evans, L. B.	2.00
Liles, Nelson P.	2.00
Norman, J. S.	2.00
	$ 10.00

BRUNSWICK COUNTY MEDICAL SOCIETY

Goodman, E. G.	$ 2.00
Dosher, J. A.	2.00
Hughes, Thos. E.	2.00
Coley, W. R.	2.00
Duckie, H. G.	2.00
	$ 10.00

BUNCOMBE COUNTY MEDICAL SOCIETY

Ambler, C. P.	$ 2.00
Anderson, J. G.	2.00
Archer, I. J.	2.00
Adams, J. L.	2.00
Battle, S. W.	2.00
Briggs, H. H.	2.00
Brookshire, H. G.	2.00
Brownson, W. C.	2.00
Buckner, R. G.	2.00
Calloway, A. W.	2.00
Carroll, R. S.	2.00
Cheesborough, T. P.	2.00
Clomenger, F. L.	2.00
Cocke, J. E.	2.00
Cotton, C. E.	2.00
Carroll, J. L.	2.00
Cocke, C. H.	2.00
Dunn, W. L.	2.00
Elias, L. W.	2.00
Eckel, O. F.	2.00
Glenn, E. B.	2.00
Huston, J. W.	2.00
Jordan, C. S.	2.00
McBrayer, L. B.	2.00
McCracken, C. M.	2.00
Morris, E. C.	2.00
Meriwether, F. T.	2.00
Merrimon, L. A.	2.00
Minor, C. L.	2.00
Morris, E. R.	2.00
Orr, C. C.	2.00
Orr, P. B.	2.00
Paquin, Paul	2.00
Pritchard, A. T.	2.00
Purefoy, G. W.	2.00
Reynolds, C. V.	2.00
Ringer, P. H.	2.00
VonRuck, K.	2.00
VonRuck, S. H.	2.00
Sevier, J. T.	2.00
Sevier, D. E.	2.00
Smith, O.	2.00
Stevens, M. L.	2.00
Tennent, G. S.	2.00
Rich, J. C.	2.00
Frazier, H. T.	2.00
Gardner, G. D.	2.00
Honeycutt, W. J.	2.00
Clontz, W. J.	2.00

Reeves, A. F.	$ 2.00
Terrell, A. J.	2.00
Russell, E. R.	2.00
Kynch, J. M.	2.00
Costells, M. J.	2.00
Davis, J. C.	2.00
Greene, J. B.	2.00
Gill, J. N.	2.00
Herbert, W. P.	2.00
Buckner, J. M.	2.00
Colby, C. D.	2.00
Griffith, F. W.	2.00
Harbeck, E. V.	2.00
Ballard, A. M.	2.0
Terry, P. R.	2.00
	$ 128.00

Honorary:—M. H. Fletcher.
J. A. Harris.
H. B. Weaver.
W. P. Whittington.
J. H. Williams.

BURKE COUNTY MEDICAL SOCIETY

Riddle, J. B.	$ 2.00
Anderson, Paul V.	2.00
Hall, James K.	2.00
Hennessee, Edmund A.	2.00
McCampbell, John	2.00
Phifer, E. M.	2.00
Taylor, Isaac M.	2.00
Warlick, E. S., 1911-1913	4.00
Watkins, F. B.	2.00
Honk, Albert	2.00
Gayle, Edward M.	2.00
Griffin, Wm. Ray	2.00
Vernon, James W.	2.00
	$ 28.00

Honorary:—I. M. Taylor.

CABARRUS COUNTY MEDICAL SOCIETY

Black, J. C.	$ 2.00
Burleyson, L. N.	2.00
Caldwell, D. G.	2.00
Foil, M. A.	2.00
Gouger, G. J.	2.00
Grier, S. A.	2.00
King, R. M.	2.00
Lafferty, J. S.	2.00
Pemberton, W. D.	2.00
Smoot, J. E.	2.00
Wallace, J. W.	2.00
Moose, D. G.	2.00
Yow, I. A.	2.00
Cauble, H. H.	2.00
McFayden, P. R.	2.00
Patterson, J. O.	2.00
	$ 32.00

Honorary:—L. M. Archey.
Theo. F. Pharr.
R. S. Young.

CALDWELL COUNTY MEDICAL SOCIETY

Carter, G. H.	$ 2.00
Corpening, O. J.	2.00
Flowers, B. G.	2.00
Kent, A. A.	2.00
McNairy, C. B.	2.00
Moore, J. C.	2.00
Stovie, J. G.	2.00
Wilson, C. L.	2.00
Goodman, A. B.	2.00
Hickman, N. F.	2.00
Pitts, J. W.	2.00
Coffey, L. H.	2.00
	$ 24.00

CARTERET COUNTY MEDICAL SOCIETY

Bonner, M. P. B.	$ 2.00
Duncan, C. L.	2.00
George, D. S.	2.00
Headen, W. E.	2.00
Royal, B. F.	2.00
Ball, M. W.	2.00
	$ 12.00

CASWELL COUNTY MEDICAL SOCIETY

Malloy, S. A.	$ 2.00

CHATHAM COUNTY MEDICAL SOCIETY

Chapin, H. T.	$ 2.00
Edwards, J. D.	2.00
Strickland, W. J.	2.00
Stroud, O. B.	2.00
Upchurch, C. G.	2.00
Fields, Robt. M.	2.00
Laster, P. D.	2.00
Farthing, L. E.	2.00
Mann, A. W.	2.00
Wrenn, Frank	2.00
McMann, W. L.	2.00
Palmer, R. W.	2.00
Hackney, B. H.	2.00
Denson, H. A.	2.00
	$ 28.00

CHEROKEE COUNTY MEDICAL SOCIETY

Highway, S. C.	$ 2.00
Hill, J. N.	2.00
Marrow, W. C.	2.00
Meroney, B. B.	2.00
Adams, N. B.	2.00
McKaig, S. F.	2.00
Webb, B. G.	2.00
Herbert, F. L.	2.00
	$ 16.00

CHOWAN-PERQUIMANS COUNTY MEDICAL SOCIETY

Cox, T. A	$ 2.00
Cason, H. M. S	2.00
McMullan, J. H	2.00
Warren, J. W	2.00
Hathaway, B. W	2.00
Smith, R. W	2.00
Ward, F. A	2.00
	$ 14.00

Honorary:—Richard Dillard.

CLEVELAND COUNTY MEDICAL SOCIETY

Aydlett, J. P	$ 2.00
Champion, C. O	2.00
Grigg, W. T	2.00
Houser, E. A	2.00
Lee, L. V	2.00
Lattimore, E. B	2.00
McBrayer, T. E	2.00
Mitchell, W. F	2.00
Oates, Geo	2.00
Palmer, B. H	2.00
Royster, S. S	2.00
Wood, J. W	2.00
Hamrick, T. G	2.00
Shoemaker, H	2.00
Hunt, J. F	2.00
	$ 30.00

COLUMBUS COUNTY MEDICAL SOCIETY

Floyd, A. G	$ 2.00
Maxwell, H. B	2.00
Smith, W. F	2.00
Withers, S. M	2.00
Worthington, J. M	2.00
Baggett, Leman	2.00
Crowell, M. H	2.00
Moore, T. V	2.00
Floyd, L. D	2.00
Floyd, J. W	2.00
Whitaker, R. B	2.00
Smith, I. A	2.00
	$ 24.00

CRAVEN COUNTY MEDICAL SOCIETY

Duffy, Lewiston	$ 2.00
Duffy, R. N	2.00
Primrose, Robt. S	2.00
Rhine, J. F	2.00
Jones, R. DuVal	2.00
Gibbs, N. M	2.00
Cotton, Geo. A	2.00
Patterson, Jos. F	2.00
Pollok, Raymond	2.00
Street, N. H	2.00
Hughes, Geo	2.00
Watson, Walter	2.00
Bonner, Montague, 1912-1913	$ 4.00
Hawes, J. S	2.00
Duguid, J	2.00
Barker, C. S	2.00
	$ 34.00

Honorary:—Francis Duffy.
Chas. Duffy.

CUMBERLAND COUNTY MEDICAL SOCIETY

Averitt, K. G	$ 2.00
Graham, Geo. A	2.00
Brown, Geo. W	2.00
Highsmith, J. F	2.00
Highsmith, Seavy	2.00
McGougan, J. V	2.00
McKethan, John A	2.00
Olive, P. W	2.00
Rose, A. S	2.00
Lilly, J. M	2.00
Jordan, Wm. S	2.00
McGougan, B. M	2.00
McKethan, D. G	2.00
Powell, R. A	2.00
Hayes, R. B	2.00
West, T. Marshall	2.00
Juat, Francis	2.00
Dickson, A. P	2.00
Hutchinson, S. S	2.00
Pittman, R. L	2.00
Smoot, M. L	2.00
Cochran, J. S	2.00
	$ 44.00

Honorary:—J. W. McNeill.

CURRITUCK COUNTY MEDICAL SOCIETY

Griggs, W. T	$ 2.00
Newbern, J. M	2.00
Garrington, Cecil	2.00
Maynard, J. D	2.00
	$ 8.00

DAVIDSON COUNTY MEDICAL SOCIETY

Buchanan, E. J	$ 2.00
Clodfelter, C. M	2.00
Hill, D. J	2.00
Hill, W. L	2.00
Mock, J. H	2.00
Mock, Frank L	2.00
York, A. A	2.00
Zimmerman, R. U	2.00
Vestal, W. J	2.00
Yokley, R. V	2.00
Long, E. F	2.00
Terry, J. R	2.00
Anderson, Abel	2.00
	$ 26.00

DUPLIN COUNTY MEDICAL SOCIETY

Carroll, J. W., 1912-1913	$ 4.00
Carr, R. L., 1912-1913	4.00
Faison, John M., 1912-1913	4.00
Graham, B. R., 1912-1913	4.00
Lane, Jno. L., 1912-1913	4.00
Lauden, J. F., 1912-1913	4.00
Williams, J. M., 1912-1913	4.00
Kennedy, G. W., 1912-1913	4.00
Crocker, W. D	2.00
	$ 34.00

DURHAM COUNTY MEDICAL SOCIETY

Adams, C. A	$ 2.00
Boddie, N. P	2.00
Bowling, E. H	2.00
Cheatham, Arch	2.00
Felts, R. L	2.00
Graham, Joseph	2.00
Hicks, W. N	2.00
Hicks, C. S	2.00
Holloway, R. L	2.00
Jordan, A. C	2.00
Manning, J. M	2.00
Olive, W. W	2.00
Ross, Geo. H	2.00
Teague, R. J	2.00
Woodard, C. A	2.00
Nichols, R. E	2.00
Brooks, B. A	2.00
Bitting, N. D	2.00
Fassett, B. W	2.00
Boone, W. H	2.00
Booker, L. S	2.00
King, N. W	2.00
Boyles, A. C	2.00
Robertson, Foy	2.00
Lyon, E. H	2.00
McPherson, S. D	2.00
Hill, C. D	2.00
Kerns, T. C	2.00
Roberson, M	2.00
Pierce, S. B	2.00
Corner, N. L	2.00
	$ 62.00

Honorary:—N. M. Johnson.

EDGECOMBE COUNTY MEDICAL SOCIETY

Bass, S. P	$ 2.00
Harrell, S. M	2.00
Mercer, W. P	2.00
Philips, J. J	2.00
Staton, L. L	2.00
Thigpen, W. J	2.00
Green, W. W	2.00
Simpson, J. P	2.00
Roby, J. C	2.00
	$ 18.00

Honorary:—J. M. Baker.
R. H. Speight.

FORSYTH COUNTY MEDICAL SOCIETY

Bynum, John	$ 2.00
Bynum, W. H	2.00
Carlton, R. L	2.00
Dalton, D. N	2.00
Davis, A. P	2.00
Davis, T. W	2.00
Fearington, J. P	2.00
Flynt, S. S	2.00
Hammock, J. C	2.00
Jewett, R. D	2.00
Kapp, H. H	2.00
Gray, E. P	2.00
Linville, A. Y	2.00
Linville, W. C	2.00
Lott, H. S	2.00
Lockett, E. A	2.00
Pfohl, S. F	2.00
Spencer, W. O	2.00
Spainhour, E. H	2.00
Strickland, E. F	2.00
Summers, C. L	2.00
Williams, J. D	2.00
Long, V. M	2.00
Johnson, W. M	2.00
Lawrence, C. S	2.00
Wiggins, J. C	2.00
Craig, S. D	2.00
Schallert, P. O	2.00
Whittington, J. B	2.00
Paddison, J. R	2.00
Chancy, T. M	2.00
	$ 62.00

Honorary—H. T. Bahnson.
J. F. Shaffner.

FRANKLIN COUNTY MEDICAL SOCIETY

Yarborough, R. F	$ 2.00
Malone, J. E	2.00
Timberlake, R. E	2.00
Johnson, B. C	2.00
Floyd, R. P	2.00
Burt, S. P	2.00
Newell, H. A	2.00
Honis, J. H	2.00
Henderson, B. B	2.00
Bobbitt, E. H	2.00
	$ 20.00

GASTON COUNTY MEDICAL SOCIETY

Adams, C. E	$ 2.00
Anders, McT. G	2.00
Davis, W. W	2.00
Eddleman, H. M	2.00
Garren, R. H	2.00
Garrison, D. A	2.00
Glenn, H. F	2.00
Jenkins, J. H	2.00
Quickel, T. C	2.00
Reid, R. M	2.00
Robinson, Frank	2.00

Sloan, J. M	$ 2.00
Wilkins, S. A.	2.00
Wilson, F. G	2.00
McCombs, C. J	2.00
Rhyne, R. E	2.00
Glenn, L. N	2.00
Anderson, Jas. A	2.00
Royster, T. H	2.00
Reid, J. W	2.00
McCoy, T. M	2.00
Orr, N. A	2.00
Puett, Bessie V	2.00
Hood, J. S	2.00
Anthony, J. E	2.00
Falls, O. G	2.00
Patrick, L. N	2.00
Rowe, R. H	2.00
Hunter, M. C	2.00
Pugh, C. H	2.00
	$ 60.00

GRANVILLE COUNTY MEDICAL SOCIETY

Coggeshall, G. A	$ 2.00
Hays, Benj. K	2.00
Meadows, E. B	2.00
Morris, J. A	2.00
Hardee, P. R	2.00
Sikes, G. T	2.00
Taylor, Wm. L., 1912-1913	4.00
Booth, T. L	2.00
Holloway, O. W	2.00
Daniel, N. C	2.00
Sanderford, J. F	2.00
Bullock, W. B	2.00
	$ 26.00

GREENE COUNTY MEDICAL SOCIETY

Edwards, G. C	$ 2.00
Murphy, W. B	2.00
Harper, J. H	2.00
Whittington, W. W	2.00
Harper, J. M	2.00
	$ 10.00

GUILFORD COUNTY MEDICAL SOCIETY

Banner, C. W	$ 2.00
Battle, J. T. J	2.00
Boyles, J. H	2.00
Bowman, H. P	2.00
Burrus, J. T	2.00
Dees, R. O	2.00
Dees, R. E	2.00
Dick, J. V	2.00
Dodson, H. H	2.00
Duncan, G. F	2.00
Fortune, A. F	2.00
Fox, M. F	2.00
Gilmer, C. S	2.00
Gove, A. M	2.00
Grayson, C. S	$ 2.00
Harrison, E	2.00
Hilton, J. J	2.00
Holt, W. T	2.00
Jarboe, Parron	2.00
Jones, W. M	2.00
Jordan, G. E	2.00
Knight, W. P	2.00
Long, J. W	2.0e
McAnally, W. J	2.00
Meadows, W. J	2.00
Michaux, E. R	2.00
Moseley, C. W	2.00
Reaves, W. P	2.00
Reitzel, C. E	2.00
Richardson, W. J	2.00
Rieves, J. T	2.00
Roberson, Chas	2.00
Stanton, D. A	2.00
Tankersley, J. W	2.00
Turner, J. A	2.00
Turner, J. P	2.00
Norman, G. W	2.00
Williams, J. A	2.00
Williams, B. B	2.00
Whitaker, A. C	2.00
Ross, G. F	2.00
Ashworth, W. C	2.00
Alford, A. E. B	2.00
Moore, C. E	2.00
Cole, W. F	2.00
McCain, H. W	2.00
Beall, L. G	2.00
Hyatt, F. C	2.00
Schoonover, R. A	2.00
Coe, S. C	2.00
Braddy, W. H	2.00
Spoon, O.O	2.00
Jackson, W. L	2.00
Reitzel, J. R	2.00
Smith, A. T	2.00
Edwards, V. E	2.00
Austin, J. W	2.00
Honorary.—A. R. Wilson. W. P. Beall.	$ 114.00

HALIFAX COUNTY MEDICAL SOCIETY

Collins, Jno. A	$ 2.00
Harrison, A. S	2.00
Ferguson, H. B	2.00
Leggett, K., 1908-'09-'10-'11-'12-'13	12.00
Register, F. M	2.00
Zollicoffer, A. R	2.00
Adkins, E. H	2.00
Irwin, H. C	2.00
Long, T. W. M	2.00
Smith, Oscar F	2.00
Nicholson, B. M	2.00
	$ 32.00

HARNETT COUNTY MEDICAL SOCIETY

Highsmith, Chas	$ 2.00
Hicks, I. F	2.00
Hudson, W. L	2.00
Holt, Wm. P	2.00
Sexton, C. H	2.00
Lee, S. P. J	2.00
Arnold, L. J	2.00
Melvin, W. C	2.00
Smith, F	2.00
Utley, H. H	2.00
McLean, J. W	2.00
Moore, F. T	2.00
Halford, J. W	2.00
McKay, J. F	2.00
Warren, R. L	2.00
Barefoot, M. L	2.00
Roberts, H. C	2.00
	$ 34.00

HAYWOOD COUNTY MEDICAL SOCIETY

Allen, R. L	$ 2.00
Abel, J. F	2.00
McCracken, J. R	2.00
Stringfield, Thomas	2.00
Stringfield, Samuel	2.00
Greenwood, B. H	2.00
Way, J. Howell	2.00
McFayden, H. L	2.00
Wilson, J. E	2.00
Willis, A. P	2.00
Reynolds, T. F	2.00
Russell, J. M	2.00
McMahan, J. Walter	2.00
	$ 26.00

HENDERSON-POLK COUNTY MEDICAL SOCIETY

Egerton, J. L	$ 2.00
Drafts, A. B	2.00
Kirk, Wm. R	2.00
Howe, W. B. W	2.00
Greenwood, S. E	2.00
Salley, E. M	2.00
Brown, J. S	2.00
Dixon, Guy E	2.00
Hooper, Jno. O	2.00
Morse, L. B	2.00
Summer, T. W	2.00
	$ 22.00

HYDE COUNTY MEDICAL SOCIETY

Jones, E. H	$ 2.00
Mann, J. A	2.00
Harris, A. G	2.00
Mann, J. E	2.00
Windley, R. E	2.00
Swindell, W. L	2.00
Clarke, F. M	2.00
	$ 14.00

HERTFORD COUNTY MEDICAL SOCIETY

Griffin, C. F	$ 2.00
Greene, A. W	2.00
Burbage, T. J	2.00
Pollard, W. B	1.00
Mitchell, J. H	2.00
Mitchell, Paul H	2.00
Harrell, Geo. N	2.00
Powell, Jesse L	2.00
	$ 16.00

IREDELL-ALEXANDER COUNTY MEDICAL SOCIETY

Adams, M. R., 1912-1913	$ 4.00
Hall, E. A	2.00
Jurney, P. C., 1911-'12-'13	6.00
Klutz, E. E	2.00
McLaughlin, J. E	2.00
Sharpe, F. L., 1912-'13	4.00
Campbell, Arch	2.00
Leeper, D. H	2.00
Honorary:—Thos. E. Anderson.	$ 24.00

JACKSON COUNTY MEDICAL SOCIETY

Nichols, A. A	$ 2.00
Nichols, A. S	2.00
	$ 4.00

JOHNSTON COUNTY MEDICAL SOCIETY

Rose, A. H	$ 2.00
Vick, Geo	2.00
Wharton, L. D	2.00
Munns, L. A	2.00
Hooks, Thel	2.00
Griffin, J. A	2.00
Stanley, Jno. H	2.00
Person, J. B	2.00
Parker, G. E	2.00
Grady, J. C	2.00
Coleman, G. S	2.00
McLemore, G. A	2.00
Mayerberg, I. W	2.00
Eason, Oscar	2.00
Griffin, T. A	2.00
Montague, S. S	2.00
Hinnant, Mulford	2.00
Honorary:—R. J. Nobles.	$ 34.00

LEE COUNTY MEDICAL SOCIETY

McIver, Lynn	$ 2.00
Monroe, J. P	2.00
Monroe, W. A	2.00
Snipes, E. P	2.00
McIver, E. M	2.00
Rosser, R. G	2.00
Watson, Leon	2.00
	$ 14.00

LENOIR COUNTY MEDICAL SOCIETY

Parrott, W. T	$ 2.00
Parrott, J. M	2.00
Parrott, A. Dek	2.00
Whitaker, R. A., 1912-'13	4.00
Hargrove, W. F	2.00
Wooten, R. W	2.00
Monk, H. G., 1911-'12-'13	6.00
	$ 20.00

Honorary:—Henry Tull.
W. W. Denny.

LINCOLN COUNTY MEDICAL SOCIETY

Hoover, C. H	$ 2.00
Crowell, L. A	2.00
Wright, J. B	2.00
Costner, Geo. H	2.00
Saine, Jno. W	2.00
Thompson, C. D	2.00
Abernathy, H. N	2.00
Killian, R. B	2.00
Kiser, W. C	2.00
Taylor, B. C	2.00
Gamble, J. R	2.00
Jacocks, W. P	2.00
	$ 24.00

MADISON COUNTY MEDICAL SOCIETY

Baird, J. H	$ 2.00
Burnett, J. E	2.00
Roberts, Frank	2.00
Tilson, J. C	2.00
Woody, S. B	2.00
Peck, E. J	2.00
Baird, J. W	2.00
	$ 14.00

MARTIN COUNTY MEDICAL SOCIETY

Hargrove, R. H	$ 2.00
Nelson, R. J	2.00
Long, B. L	2.00
Fleming, M. I	2.00
Smithwick, J. E	2.00
Knight, J. B. H	2.00
Warren, W. E	2.00
Rhodes, J. S	2.00
York, H. B	2.00
Saunders, Jos. H	2.00
Ward, J. E	2.00
Williams, J. W	2.00
Long, E. M	2.00
	$ 26.00

MECKLENBURG COUNTY MEDICAL SOCIETY

Alexander, Annie L	$ 2.00
Austin, J. A	2.00
Austin, Fred D	2.00
Alexander, J. R	2.00
Crowell, A. J	$ 2.00
Costner, T. F	2.00
Clifford, J. S	2.00
Davidson, J. E. S	2.00
DeArmond, J. M	2.00
Gibbon, R. L	2.00
Graham, W. A	2.00
Hunter, L. W	2.00
Hovis, L. W	2.00
King, P. M	2.00
Lafferty, Robt. H	2.00
Meisenheimer, C. A	2.00
McLaughlin, C. S	2.00
Munroe, J. P	2.00
McKay, H. W	2.00
Nesbitt, W. O	2.00
Pressly, G	2.00
Peeler, C. N	2.00
Register, E. C	2.00
Reid, W. K	2.00
Irvin, Jno. R	2.00
Simonds, J. O	2.00
Allen, Wm. M	2.00
Walker, C. E	2.00
Wakefield, W. H	2.00
Winchester, F. M	2.00
Whisnant, A. M	2.00
Witherbee, W. D	2.00
Wooten, W. H	2.00
Abernathy, J. S	2.00
Strong, C. M	2.00
Query, R. Z	2.00
Nalle, Brodie C	2.00
Matheson, J. P	2.00
Moore, A. W	2.00
Patterson, Reid	2.00
McConnell, Jno. W	2.00
Myers, J. Q	2.00
Crowell, S. M	2.00
Leinback, R. F	2.00
Wright, Thos. H	2.00
Summers, J. W	2.00
Petrie, R. W	2.00
Tucker, J. H	2.00
Brenizer, A. G	2.00
Barron, A. A	2.00
Wakefield, H. A	2.00
Cauthen, R. S	2.00
Witherspoon, B. J	2.00
Whisnant, W. E	2.00
Trippe, C. M	2.00
Squires, J. W	2.00
Ranson, J. L	2.00
Ross, Otho B	2.00
Moore, O	2.00
Faison, Yates	2.00
Henson, A. M	2.00
Hard, E. H	2.00
	$ 124.00

Honorary:—I. W. Faison.
J. R. Irvin.
C. A. Meisenheimer.

McDOWELL COUNTY MEDICAL SOCIETY

Ashworth, B. L.	$ 2.00
Morphew, M. F.	2.00
Kirby, G. S.	2.00
McIntosh, D. M.	2.00
Justice, G. B.	2.00
Jonas, J. F.	2.00
	$ 12.00

MITCHELL-WATAUGA-AVERY COUNTY MEDICAL SOCIETY

Peterson, C. A.	$ 2.00
Sloop, E. H.	2.00
Stock, R. E.	2.00
Tate, W. C.	2.00
	$ 8.00

MONTGOMERY COUNTY MEDICAL SOCIETY

Thompson, A. F.	$ 2.00
Daligny, Chas.	2.00
Bowman, H. E.	2.00
Ingram, C. B.	2.00
Shamberger, Jno. B.	2.00
Dowd, J. A.	2.00
Andrews, V. L.	2.00
Dameron, E. L.	2.00
	$ 16.00

MOORE COUNTY MEDICAL SOCIETY

Mudgett, W. C.	$ 2.00
McLeod, G.	2.00
McDonald, A. A.	2.00
Matthews, M. L.	2.00
Shields, H. B.	2.00
Wilson, J. W.	2.00
Swett, W. P.	2.00
Matthews, J. H.	2.00
Bethune, A. C.	2.00
McLeod, A. H.	2.00
Blair, A. McNeil	2.00
McMillan, Jno. M.	2.00
Grier, Chas. T.	2.00
	$ 26.00

NEW HANOVER COUNTY MEDICAL SOCIETY

Bellamy, R. H.	$ 2.00
Borneman, J. H.	2.00
Wood, E. J.	2.00
Green, Thos. M.	2.00
Nesbit, Chas. T.	2.00
Harper, Chas. T.	2.00
Wessell, Jno. C.	2.00
Honnett, J. H.	2.00
Akerman, J. A.	2.00
Crammer, J. B.	2.00
Caldwell, M. M.	2.00
Murphy, J. G.	2.00
Harris, A. H.	$ 2.00
Russell, F. H.	2.00
Koonce, S. E.	2.00
Bolles, C. P.	2.00
Willingham, B. J.	2.00
Moore, W. H.	2.00
Bulluck, E. S.	2.00
Burbank, T. S.	2.00
Moore, H. T.	2.00
LeGwin, Jno	2.00
	$ 44.00

Honorary:—W. C. Galloway.
W. J. H. Bellamy.
Wright Hall.
D. W. Bullock.
Jno. T. Schoenwald.
W. D. McMillan.
A. D. McDonald.
Geo. G. Thomas.
W. J. Love.

NORTHAMPTON COUNTY MEDICAL SOCIETY

Morehead, R. P.	$4.00
Bolton, Mahlon, 1912-'13	4.00
Lewis, H. W.	2.00
Stancell, R. H.	2.00
Cook, Q. H.	2.00
Joyner, T. O.	2.00
Lister, J. L.	2.00
Lassiter, Edgar W.	2.00
Brittle, P. C.	2.00
Whimmus, T. G.	2.00
Naff, G. N.	2.00
Parker, C. G.	2.00
	$ 26.00

ONSLOW COUNTY MEDICAL SOCIETY

Cox, E. L.	$ 2.00
Thompson, Cyrus	2.00
Sutton, C. W.	2.00
Hughes, Geo. R.	2.00
Bryan, L. D.	2.00
Hyatt, H. O.	2.00
Hyatt, A. L.	2.00
Blount, F. H.	2.00
Kornegay, G.	2.00
Daniels, R. L.	2.00
Brown, F. L.	2.00
	$ 22.00

Honorary:—J. L. Nicholson.

ORANGE COUNTY MEDICAL SOCIETY

Manning, I. H.	$ 2.00
Abernathy, E. A.	12.0
Mangum, Chas. S.	2.00
MacNider, Wm. DeB.	2.00
Webb, Louis H.	2.00
Lloyd, B. B.	2.00
Mebane, W. N.	2.00
Williams, T. R.	2.00
	$ 16.00

PAMLICO COUNTY MEDICAL SOCIETY

Atmore, Geo. S	$ 2.00
Daniels, Oscar C	2.00
Dees, D. A	2.00
McCotter, S. E	2.00
Watts, R. E	2.00
	$ 10.00

PASQUOTANK-CAMDEN-DARE COUNTY MEDICAL SOCIETY

Griggs, Jno. B	$ 2.00
Walker, H. D	2.00
Fearing, Zenas	2.00
Fearing, I	2.00
McMullan, Oscar	2.00
Aydlett, H. T	2.00
Sawyer, C. W	2.00
Lumsden, W. J	2.00
Williams, C. B	2.00
Hogggrd, W. A	2.00
Sutton, C. A	2.00
Cohn, B. W	2.00
Sawyer, W. W	2.00
	$ 26.00

PENDER COUNTY MEDICAL SOCIETY

Bradford, R. H	$ 2.00
Hoggard, J. T	2.00
	$ 4.00

PERSON COUNTY MEDICAL SOCIETY

Nichols, C. G	$ 2.00
Bradsher, W. A	2.00
Baynes, R. S	2.00
Long, W. T	2.00
Love, B. E	2.00
Schaub, O. P	2.00
Swann, J. F	2.00
Merritt, J. H	2.00
Nichols, A. F	2.00
Gentry, G. W	2.00
Warren, Robt. Franklin	2.00
	$ 22.00

PITT COUNTY MEDICAL SOCIETY

Nobles, J. E	$ 2.00
Basnight, T. G	2.00
Skinner, L. C	2.00
Fountain, Wm	2.00
Jones, C. M	2.00
Laughinghouse, Chas. O'H	2.00
Ward, V. A	2.00
Griffin, C. O	2.00
Dixon, W. H	2.00
	$ 18.00

RANDOLPH COUNTY MEDICAL SOCIETY

Hubbard, C. C	$ 2.00
Summer, W. I	2.00
Moore, W. J	2.00
Fox, T. I	2.00
Hunter, J. V	2.00
Asbury, F. E	2.00
Phillips, C. H	2.00
	$ 14.00

ROBESON COUNTY MEDICAL SOCIETY

Brown, J. P	$ 2.00
Croom, J. D	2.00
Currie, D. S	2.00
Croom, A. B	2.00
McMillan, B. F	2.00
Evans, W. E	2.00
Gibson, M. R	2.00
Hodgin, H. H	2.00
Kirkpatrick, L. R	2.00
Knox, Jno. Jr	2.00
McMillan, J. L	2.00
McPhail, W. A	2.00
Northrup, T. L	2.00
Norment, T. A	2.00
Pate, C. M	2.00
Pope, H. T	2.00
Reedy, Howard,	2.00
Rozier, R. G	2.00
Stamps, Thomas	2.00
Stevens, W. F	2.00
Thompson, N. A	2.00
Smith, J. Mc	2.00
Grantham, W. L	2.00
Harris, D. W	2.00
Surles, J. B	2.00
Andrews, N. H	2.00
Schubert, S. H	2.00
McMillan, Roscoe	2.00
Johnson, T. L	2.00
McClelland, J. O	2.00
Early, W. W	2.00
Ricks, L. E	2.00
Ayers, T. B	2.00
Page, B. W	2.00
Poole, C. T	2.00
	$ 70.00

ROCKINGHAM COUNTY MEDICAL SOCIETY

McGehee, J. W	$ 2.00
Ray, J. B	2.00
Sweaney, Jno	2.00
Tuttle, A. F	2.00
Wharton, C. R	2.00
Taylor, T. G	2.00
Ellington, S. B	2.00
Boaz, T. A	2.00
Webb, S. E	2.00
Taylor, J. T	2.00
Matheson, R. C	2.00

Johnson, W. A	$ 2.00
Abernathy, A. B	2.00
Martin, S. L	2.00
Jett, S. G	2.00
McBride, M. H	2.00
Cummins, M. P	2.00
Wilson, W. P	2.00
	$ 36.00

ROWAN COUNTY MEDICAL SOCIETY

Brown, G. A	$ 2.00
Brawley, R. V	2.00
Busby, J. G	2.00
Caldwell, J. A	2.00
Councill, J. B	2.00
Crump, W. L	2.00
Heilig, H. G	2.00
Monk, H. L	2.00
McKenzie, W. W	2.00
Ramsaur, G. A	2.00
Stokes, J. E	2.00
West, R. M	2.00
Woodson, Chas. W	2.00
Edwards, B. O	2.00
Monk, G. M	2.00
Choate, G. W	2.00
Sigmon, Fred G	2.00
Currie, E. W	2.00
Spencer, F. B	2.00
	$ 38.00

Honorary:—C. M. Poole.
E. M. Summerell.
H. T. Trantham.
Jno. Whitehead.

RUTHERFORD COUNTY MEDICAL SOCIETY

Harris E. B	$ 2.00
Biggs, H. M	2.00
Andrews, R. M	2.00
Bostie, W. C	2.00
Hicks, R	2.00
Harrill, L. B	2.00
Lovelace, T. B	2.00
Reid, G. P	2.00
Twitty, J. C	2.00
Thompson, J. B	2.00
Thompson, W. A	2.00
Wiseman, C. B	2.00
Norris, Henry	2.00
Rucker, A. A	2.00
Smart, J. B	2.00
Allhands, J. M	2.00
Gold, Chas. F	2.00
Shull, J. Rush	2.00
Washburn, Ben E	2.00
	$ 38.00

SAMPSON COUNTY MEDICAL SOCIETY

Holmes, F. H	$ 2.00
Cooper, G. M	2.00
Crumpler, Paul	$ 2.00
Matthews, J. O	2.00
Sloan, Henry	2.00
Sikes, G. L	2.00
Stevens, J. A	2.00
McLean, R. H	2.00
Wilson, R. B	2.00
Kerr, J. D., Jr	2.00
Underwood, O. E	2.00
Taylor, W. I	2.00
	$ 24.00

SCOTLAND COUNTY MEDICAL SOCIETY

Everington, G. D	$ 2.00
John, Peter	2.00
Pate, W. T	2.00
Shaw, W. G	2.00
Gibson, J. S	2.00
James, Wm. D	2.00
McLean, Peter	2.00
McLean, Allen	2.00
Ervin, E. W	2.00
Livingston, Everett	2.00
	$ 20.00

Honorary:—D. M. Prince.

STANLY COUNTY MEDICAL SOCIETY

Anderson, J. N	$ 2.00
Allen, J. A	2.00
Cox, B. F	2.00
Hill, Wm. I	2.00
Hall, J. Clegg	2.00
Hartsell, F. E	2.00
Hathcock, T. A	2.00
Whitley, D. P	2.00
Laton, J. F	2.00
Dunlap, L. V	2.00
Magruder, L. F	2.00
	$ 22.00

STOKES COUNTY MEDICAL SOCIETY

McCanless, W. V	$ 2.00
McCanless, W. L	2.00
Jones, A. G	2.00
Ellington, J. H	2.00
Tuttle, R. G	2.00
Phillips, M. D	2.00
	$ 12.00

Honorary:—J. H. Hill.

SURRY COUNTY MEDICAL SOCIETY

Smith, J. B	$ 2.00
Woltz, J. L	2.00
Allred, E. B	2.00
Ashby, T. B	2.00
Hollingsworth, E. M	2.00
Hollingsworth, R. E	2.00

Flippin, S. T.	$ 2.00
Flippin, R. E. L.	2.00
Taylor, W. S.	2.00
Reese, J. M.	2.00
Ring, J. W.	2.00
Stone, Westley M.	2.00
Flippin, J. M.	2.00
Absher, D. C.	2.00
Baird, C. A.	2.00
Royal, M. A.	1.00
Salmon, Lee R.	2.00
Wilborn, Wm.R.	2.00
Lovell, R. J.	2.00
	$ 38.00

TRANSLYVANIA COUNTY MEDICAL SOCIETY

English, E. S.	$ 2.00
Cheatham, Goode	2.00
Wallace, W. J.	2.00
Hunt, C. W.	2.00
Lyday, A. E.	2.00
Lyday, C. E.	2.00
	$ 12.00

UNION COUNTY MEDICAL SOCIETY

Armfield, R.	$ 2.00
Blair, J. M.	2.00
Eubanks, J. B.	2.00
Nance, G. B.	2.00
Neal, J. W.	2.00
McCain, W. R., 1912-'13	4.00
Perkins, D. R.	2.00
Stevens, S. A.	2.00
Stewart, H. D.	2.00
Ashcraft, J. E.	2.00
Whitley, A. D. N.	2.00
Blair, M. P.	2.00
Jerome, J. R., 1912-'13	4.00
Guion, L. E., 1912-'13	4.00
Payne, R. L.	2.00
Fitzgerald, J. Y.	2.00
Boger, D. T.	2.00
	$ 40.00

VANCE COUNTY MEDICAL SOCIETY

Bass, H. H.	$ 2.00
Fenner, E. F.	2.00
Gill, R. J.	2.00
Harris, F. R.	2.00
Allen, B. G.	2.00
Upchurch, R. T., 1912-'13	4.00
Chapin, W. B.	2.00
Perkins, F. E.	2.00
Morton, N. D.	2.00
Adams, D. C.	$ 2.00
Furman, W. H.	2.00
	$ 24.00

WAKE COUNTY MEDICAL SOCIETY

Abernethy, C. O.	$ 2.00
Anderson, Albert	2.00
Burt, B. W.	2.00
Caviness, Z. M.	2.00
Carroll, Dixon E. D.	2.00
Goodwin, A. W.	2.00
Horton, W. C.	2.00
Johnson, R. W.	2.00
Jordan, T. M.	2.00
Judd, J. M.	2.00
Knox, A. W.	2.00
McCullers, J. J. L.	2.00
McGee, J. W.	2.00
Penny, J. A. J.	2.00
Powers, J. B.	2.00
Ray, O. L.	2.00
Rankin, W. S.	2.00
Rogers, Jas. R.	2.00
Royster, H. A.	2.00
Sorrell, L. P.	2.00
Stevens, R. S.	2.00
Thompson, S. W.	2.00
Tucker, H. McKee	2.00
Templeton, J. M.	2.00
Watson, J. B.	2.00
Underhill, H. P.	2.00
Shore, C. A.	2.00
Turner, H. G.	2.00
Ferrell, Jno. A.	2.00
Moore, J. L.	2.00
Strickland, J. A.	2.00
Campbell, A. C.	2.00
Powers, J. B., Jr.	2.00
Haywood, H. B., Jr.	2.00
Carstarphen, W. T.	2.00
Lowery, J. R.	2.00
Root, A. S.	2.00
Pendleton, A. S.	2.00
	$ 76.00

Honorary:—W. I. Royster.
K. P. Battle, Jr.
R. H. Lewis.
A. W. Knox.

WARREN COUNTY MEDICAL SOCIETY

Macon, P. J.	$ 2.00
Peele, Chas. H.	2.00
Holt, T. J.	2.00
Macon, G. H.	2.00
Perry, M. P.	2.00
	$ 10.00

WASHINGTON-TYRRELL COUNTY MEDICAL SOCIETY

Hardison, W. H.	$ 2.00
Hassell, J. L.	2.00
Halsey, B. F.	2.00
Speight, J. W.	2.00
Ward, W. H.	2.00
Disosway, A. W.	2.00
Spruill, Jos. L.	2.00
Stancell, W. W., 1911-'12-13	6.00
Marriner, N. B.	2.00
Flowers, Clarence A.	2.00
Gilmer, B. H.	2.00
	$ 26.00

WAYNE COUNTY MEDICAL SOCIETY

Faison, W. W.	$ 2.00
Lee, R. E.	2.00
Kennedy, J. B.	2.00
Exum, Wyatt. P., Jr.	2.00
Sutton, W. G.	2.00
Kornegay, L. W.	2.00
Person, E. Cooper	2.00
Robinson, M. E.	2.00
Parker, J. Rainey	2.00
Ginn, Theo. L.	2.00
Bizzelle T. M.	2.00
Brothers, J. E.	2.00
Miller, R. B.	2.00
Morris, G. B.	2.00
Smith, W. H.	2.00
Steele, W. C.	2.00
Strosnider, C. F.	2.00
Turlington, W. T.	2.00
Smith, R. A.	2.00
	$ 38.00

Honorary:—Roger A. Smith.
W. W. Faison.

WILKES COUNTY MEDICAL SOCIETY

Turner, J. M.	$ 2.00
Gilreath, F. H.	2.00
Horton, W. P.	2.00
Duncan, J. E.	2.00
White, J. W.	2.00
Hutchens, E. M.	2.00
Jeffers, T. N.	2.00
Townsend, M. L.	2.00
Sink, Chas. S.	2.00
	$ 18.00

WILSON COUNTY MEDICAL SOCIETY

Herring, B. S.	$ 2.00
Dickinson, E. T.	2.00
Moore, C. E.	2.00
Anderson, W. S.	2.00
Williams, A. F.	2.00
Lamm, I. W.	2.00
Moore, E. G.	2.00
Harrison, J. S.	2.00
Barnes, B. F.	2.00
Best, Henry B.	2.00
Eagles, C. S.	2.00
Saliba, M. M.	2.00
Moore, K. C.	2.00
Reid, D. H.	2.00
Coltrane, W. E	2.00
Lewis, G. W.	2.00
Smith, G. W.	2.00
	$ 34.00

Honorary:—C. E. Moore.

YADKIN COUNTY MEDICAL SOCIETY

Harding, T. R.	$ 2.00
Shore, T. W.	2.00
Holcomb, C. M.	2.00
Clingman, J. J.	2.00
Russell, S. L.	2.00
Finney, J. R.	2.00
Harding, S. A.	2.00
	$ 14.00

REPORT OF BOARD OF COUNCILORS.

This report can be made very brief. Much work has been done by the Councilors of every district and close touch has been maintained between the Councilors and their respective societies. One fact has been frequently impressed upon the members of the board in the past few years, namely: that although interest in the county and district societies is as great or greater than ever before, interest in the State Society is waning. This is true not in one locality only, but throughout the State. So apparent is this to the various Councilors and so serious does this condition appear to the Board of Councilors that they feel that it is necessary for the State Society to devise ways and means of creating greater interest on the part of members of the county societies in the work of the State Society.

M. L. Stevens, *President.*
K. P. B. Bonner, *Secretary.*

Report from First District—Dr. Jas. L. Spruill, *Columbia:*

There are four active medical societies, viz., Currituck, with seven members, meets every three months; Pasquotank, Camden and Dare, with ten members, meets every month; Chowan and Perquimans, seven members, meets every six months; Washington and Tyrrell ten members, meets every two months.

Efforts have been made to organize a district society in the First District, but owing to geographical conditions we have as yet been unable to effect such organization.

Report from Second District—Dr. K. P. B. Bonner, *Morehead City:*

At this the expiration of my term as your Councilor of the Second District, I beg leave to report that while we have made no great advances in the direction of increasing our numbers, I believe that we have somewhat strengthened our existing organizations. Some counties have practically no organization, others but an indifferent one, and last but not least some have model societies which are active and progressive and are all that a county medical society was intended to be.

Due to a peculiar combination of circumstances, our District Society has not met for the past year, although interest remains good in this organization. We have just formulated plans looking to development of this society to what it should be, and if possible to encourage its members to present clinical cases at each meeting. Such an additional feature could only add to the attractiveness of the society and add to its popularity.

I have exerted my best efforts during the past three years in an endeavor to build up the county societies and strengthen their organizations. This is the main function of a Councilor.

Report from Third District—Dr. G. L. Sikes, *Salemburg:*

I have tried to do some work in the Third District each year, but with little result. I would like to state that I was absent when elected Councilor, and owing to sickness in my own family that year and the next, I have not.

had the privilege of meeting with the Councilor Board since election till this year. Our work has been each year trying to stimulate the society work in each county and to effect the organization of a district medical society, but find the difficulty is in getting the secretaries of the county societies to answer correspondence; one can't get in touch with them. I have each year, at three different periods, written them, making special inquiry concerning the work being done and the interest that was being shown in their county society without having received an answer from but three.

I have been informed at this meeting by most of them that the reason was the county societies did not meet to consider matters of interest to their society that they could not get the doctors to attend, and therefore did not know how to answer the Councilor's inquiry.

So far as I have been able to find out, I think every county in the Third District pretends to have some form of county society, but only three of them hold as many as three meetings annually.

I am glad to inform you, though, that we have succeeded at this meeting in organizing a District Medical Society, our first meeting to be held in Wilmington some time in December next, and we hope that the Third District will be able to show you more progress in the future than in the past. All the members of the Third District present here seem very enthusiastic over organization of such society.

Report from Fourth District—Dr. M. M. Saliba, *Wilson:*

A good many of you have heard or known what we are doing in the Fourth District. While the interest of the profession is greater than ever before, one thing is still lacking, the interest of the men in the State Society. Our District Medical Society came to the front again and at its last regular meeting proposed to publish a bulletin. The bulletin will be issued eight times a year, one before and one after each meeting, and will contain the programs and the transactions of its meetings as well as medical articles and news of interest to the men of the district. It will be sent free to every white regularly practicing physician in the district, so that the men who are not members of the District Society will see what the men of the society are doing. I believe by such doings we can bring them around to join the society. The District Society meets four times a year. Dr. Ferrell was in Tarboro at our last meeting and complimented us very highly on the large attendance.

Without a doubt, in my mind, the reasons for physicians not taking enough interest in the State Medical Society are that the work and the system of the State Society do not apply to the State of North Carolina. In other words, it is very hard to organize county medical societies and make them a unit for the State Medical Society, owing to the smallness of the counties and the fewness of the physicians in them. Unfortunately, very few counties in this State have large enough towns to have enough physicians to make a nucleus for a county medical society. When a county has only three or four physicians, it is hard to organize a society, and if two or three counties organize together and have enough men to make a society it is still harder to get them together, due to the distance they have to travel before they can reach the meeting place. So I believe that the State Medical Society should provide for the district medical societies to be component parts of itself, and to let the district societies organize their county societies according to

the best advantage. In this way, I believe, we can reach the men a great deal better than we can now. I see from the report of the Secretary that so many counties have organized county societies. They may have paid their annual dues, but it is very doubtful if the majority of them ever had any meetings. The State Society is not profiting by them, they are dead timber, and would be better had they not been enrolled as societies.

Another thing I have noticed is that in the program of the State Society some men have their names for more than one paper, while others may not have had the advantage of being heard. I believe that the Secretary should issue a circular letter about two or more months before each annual meeting to every member of the State Society, asking and urging him to read a paper. Then if there are not enough papers secured in this manner, the chairmen of the sections can ask for more. Let us give every member a fair show to read a paper if he wants to do so.

Another thing I think is a hindrance to the State Society is that men are honored by having their papers printed in the Transactions when they did not attend the meeting and when their papers were not presented at that meeting.

I am saying these things not from malice or selfish motives, but from the interest I have in the State Society and the profession at large. When I came to this State in 1910, I was struck by the lack of interest in the State Society. I have attended every meeting since, and found that the interest is not only lacking but waning. There must be a cause, and the cause must be found out and remedied. For this purpose, I do recommend in my report that the State Medical Society make the necessary changes to meet those conditions and to make the district medical societies the component parts of the State Society.

Report from Fifth District—Dr. A. B. Croom, Maxton:

Speaking for the Councilor, I would say that we are well organized in the Fifth District. The district society is in a flourishing condition. We have meetings quarterly, and they are very well attended. We get on an average an attendance of 45 to 50. I think our district is in good condition. I also think one or two counties in the district could be helped a good deal by a visit from the Councilor.

Report from Sixth District—Robert L. Felts, Durham:

All counties of the district are organized, except Caswell, which has only one or two physicians. Interest in the work of the counties and district is increasing. Interest in the State Society seems at a standstill, in a few counties waning. We have an annual district meeting usually held in April or May. The attendance is always good, and during the past three years we have not failed to have the scientific program carried out in full.

Report from Seventh District—Dr. A. J. Crowell, Charlotte:

I think our district is in very good condition. We have county medical societies in each county, and I think pretty nearly all the men practicing in these counties are members of these county medical societies. I do not think more than half a dozen men are not members of the societies. One or two counties are a little slow, and we hope to stir them up a little. During the three years that I have been Councilor I have visited every county medi-

cal society in my district from one to three times. One or two counties need visiting again, and I hope whoever succeeds me will succeed in getting them aroused again.

We have annual meetings for scientific work. We tried the experiment not long since of having a clinical conference of one day which I think was quite a success. We had about fifty-five major operations at this clinical conference at the five hospitals in our city. I hope this conference will be continued, possibly having two a year. In the State of North Carolina there are a number of large cities, one in almost every district, in which such conferences might be established. We had in addition to the operative work clinical lectures demonstrating cases of special interest which made the conference one of great value. I hope this may be taken up in other places.

Report from Ninth District—Dr. D. J. Hill, Lexington:

The Ninth District, as perhaps you know, was organized as a district only last year. That was not done through any special work or influence of the present Councilor; it followed the good work of the illustrious predecessors of the present Councilor. A man was selected as president of the organized district of such ability and activity, such a tireless worker, that the work has gone on very beautifully, and now we have a well organized district association and we have also, in most of the counties, active county associations. There is one county in the Ninth District which I believe has made no report for three years, Catawba County. That we hope will be well fixed up by the successor of the present Councilor. I have written not only to the secretaries of the various organizations, but to a number of physicians in the various counties, offering my services at any time, and with very few exceptions the services of the Councilor have been silently declined. We hope that will all be changed when my successor takes his seat.

Davie County is a small county, no big towns in the county, no bunching together of physicians, and it is probably difficult for them to be as active as they would be glad to be. There still remain, in the mountain section of the district, two or three counties still without organization. This we hope may be properly wrought out by the incoming administration.

Report from Tenth District—Dr. M. L. Stevens, Asheville:

Buncombe County has the largest local society in the State, with over sixty members and twenty-four well attended meetings each year. Haywood, Henderson-Polk, Cherokee, McDowell, and Madison have working societies. The misunderstanding which had existed between the Macon-Clay Society and the State Association has been adjusted by the Councilor for the District. This society has been reorganized and has sent in its dues for the current year. In the remaining counties, owing to conditions which have been mentioned in previous reports, working societies are not feasible. As a whole the district is in good condition.

Petition read by Dr. I. H. Manning for combining Durham and Orange County societies:

Owing to the difficulties of maintaining an active organization of the Orange County Medical Society, the physicians of Orange County petition

the House of Delegates to be allowed to transfer their membership to the Durham County Medical Society. I. H. MANNING,

Approved: *Representing the Physicians of Orange County.*

ROBERT L. FELTS,

Councilor Sixth District.

Adopted.

COMMITTEE REPORTS

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION TO THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA.

GENTLEMEN:—Your Committee on Public Policy and Legislation begs to report that we have held two meetings, one at High Point and one at Raleigh, and that the chairman and secretary of your committee have done various and sundry other individual work. We have continued the plan, adopted two years ago, of having a committee of one physician in each county in the State to coöperate with us. They have been thoroughly informed as to matters of legislation in regard to medical education and public health that have been presented to the Legislature, and from time to time when we have needed their assistance they were informed of the progress of matters during the session of the Legislature. With very few exceptions each individual member of this committee has coöperated with your committee and been a great help by bringing the various matters in which we were interested to the personal attention of their Senator or Representative.

We beg to report further that the various members of the committee and the various other forces in the State working with us have been very successful.

First, in regard to medical education, we beg to report that section 4498 of The Revisal of 1905 was amended by inserting the words "and scientific" in the proper place, so that the meaning of the section is, that before a doctor can enter upon examination for a license he must present a diploma from a college which gives clinical and scientific instruction satisfactory to the board.

Section 1 of chapter 890 of the Public Laws of 1907 was amended so that an applicant for a license must present a diploma from a medical college requiring a four years course. Heretofore the law only required a diploma from a college requiring a three years course. It made no material difference, because all medical colleges, no matter how poor the instruction they give, require a four years course, but when people looked up the law it gave them the idea that our State was far behind the times.

Section 4501 of The Revisal of 1905 was amended so as to make the license fee $15.00 and the fee for reciprocity license $50.00.

The President and Secretary of the Board were empowered to administer oaths to any person appearing before the Board.

The most important amendment, however, in regard to medical education was that requiring all applicants for license to satisfy the Board that he has an academic education equal to the entrance requirements of the University of North Carolina, not to be applicable, however, to bona fide citizens of North Carolina until the year 1917, but immediately effective as regards citizens of other States.

Health Legislation:

All health legislation as proposed by the State Board of Health, after a conference with your committee, was supported in every way possible by your committee. The most important health legislation was the passing of a Statewide vital statistics law and the providing of an appropriation of ten thousand dollars for the enforcement of the same. The appropriations to the central office of the State Board of Health, the hookworm work under Dr. Ferrell and the laboratory work under Dr. C. A. Shore were materially increased, though not quite as much as they desired, but considering the state of the State Treasury we think that the health work was well provided for by the Legislature. There were various and sundry amendments to the State health laws which it is unnecessary to report here.

An important measure along health lines was an appropriation of $7,500 to the State Tuberculosis Sanatorium to be used for the care and treatment of indigent tubercular patients in North Carolina. The credit for this appropriation, however, is due to Dr. J. R. Gordon, of Guilford County, who is chairman of the Board of Directors of the State Sanatorium and who was chairman of the Committee on Health in the General Assembly of 1913.

We must not close this report without stating that much credit is due Dr. L. B. Evans, of the Eleventh District, chairman of the Committee on Health in the Senate, and Dr. J. R. Gordon, of Guilford, chairman of the Committee on Health in the House, for the kindly reception our measures received in the General Assembly and our thanks are duly tendered them.

All of which is respectfully submitted.

Approved:

ALBERT ANDERSON,
Chairman.

L. B. MCBRAYER,
Secretary.

Adopted.

REPORT OF FINANCE COMMITTEE.

Your Finance Committee beg leave to report that it is unable to intelligently check up the books of your Secretary and Treasurer, due to the following reasons:

(1) In our opinion the books are not sufficient for the uses of the Society.

(2) There does not seem to be any definite time for the beginning and ending of the year.

(3) The reports from the county societies are not regular, as they have no specified time in which to report.

We recommend:

(1) That a uniform and sufficient set of books be purchased for both the Secretary and the Treasurer of the State Society.

(2) That some definite time during the year be designated when the county officers shall make their report to the State officers.

(3) That a duplicate report of the county officers be made to the State Secretary and Treasurer and that these be kept and recorded for the use of the finance committee in checking up the books.

(4) That a detailed report be made to the Society by both the Secretary and the Treasurer.

H. W. S. Cason.
E. T. Dickinson.
C. O. Abernethy.

Adopted.

For report of Committee on Obituary, which was presented as a part of the proceedings of the House of Delegates, see page 186.

REPORT OF COMMITTEE ON CONSTITUTION AND BY-LAWS.

Dr. A. A. Kent, Chairman: I was instructed to make a redraft of the Constitution and By-Laws, or rather, the committee was instructed to redraft the proposed amendments to the Constitution and By-Laws, giving a parallel reading, on one side the old and on the other side the new reading. We were to have it printed and report it to the county medical societies two months before this meeting, so that it might be acted upon in the county medical societies before they elected their delegats. Unfortunately for me I was necessarily taken out of the State for five weeks the first of the year. When I returned you general practitioners may know what I found to do. It was impossible for me to neglect my business to the extent of finding the time for doing this work, and I can only say that in consequence of my absence from the State for so long this work was never done. If it is the desire of the House of Delegates to continue this committee I will yet try to do that work. If you desire to appoint another committee or dispose of the matter in any other way it will be entirely satisfactory to the present committee.

Dr. L. B. McBrayer: So far as I am concerned, I am entirely willing to let the matter go over, but as Dr. Kent is interested in the matter I would like to ask him whether he desires to carry it along or let it drop.

Dr. H. D. Stewart: This thing has been carried on for two years already, and the members of this Society are expecting something to be

done. There is a great deal of dissatisfaction, and I move that Dr. Kent be requested to read to this body the motion for amendment. Just let him give us a synopsis.

Dr. Kent: Two things have been asked of me—one that I give expression of what I desire, and the other to give a synopsis at least of what this amendment proposes. I think we can read what the amendments were. As to my desires, a good many have come to me and asked that this thing be not dropped; that the committee be continued.

Motion carried that the committee be continued.

COMMUNICATIONS AND RESOLUTIONS.

The communications from Raleigh and Durham asking for the 1914 meeting of the Society were referred to Dr. A. A. Kent, chairman of the Nominating Committee.

Communication sent in by Dr. Eugene B. Glenn, for the Buncombe County Society, referred to the Committee on Constitution and By-Laws.

Resolved. That we extend the hearty thanks of this Society to the Carteret County Medical Society for their invitation to sail to the beach this afternoon, and we regret that we could not accept same on account of the demands of our program.

Adopted.

Resolved, That the Medical Society of the State of North Carolina extends a vote of thanks to the Carteret County Medical Society and its Entertainment Committee for the splendid hospitality and entertainment accorded the Society.

That we also thank the Atlantic Hotel for its kind consideration in caring for the Society.

Adopted.

Resolved, That the North Carolina Medical Society desires to express its appreciation to Mrs. Harriman and Dr. Davenport for the furnishing to our State for 1912-1913 a field worker in eugenics. We assure them of our hearty coöperation in their efforts for racial better ment.

J. L. Nicholson.
O. McMullan.

THURSDAY—MORNING SESSION

Called to order by President J. P. Munroe.

THE PRESIDENT: One of the recommendations of the State Secretary was that the reports of the secretaries of the county societies be made on January 31, instead of March 31. In order to adopt this recommendation it was necessary to amend the by-laws, and it was therefore necessary to let this suggetion lie on the table one day and be taken up and voted on today, to conform with the requirements of the by-laws. Does any one wish to make a motion in regard to this matter?

DR. A. A. KENT: If this is the proper time for that matter to be taken up and acted upon, I desire to move that we adopt the suggestion of the State Secretary in this matter.

Motion carried.

DR. A. A. KENT: I move that the reports of the Councilors be accepted and published.

Motion carried.

DR. W. L. DUNN, Asheville: I would like to make a motion, because it seems to me that some points that Dr. Saliba made are exceedingly important, and some of his suggestions are very good. We should have a plan to fit the State. I would like, therefore, to make a motion that a committee of three be appointed by the chair to consider the suggestions of Dr. Saliba, with the idea of reporting to the next meeting of the State Society.

Motion carried.

COMMITTEES.

To consider Dr. Saliba's report and suggestions: Dr. M. M. Saliba, Wilson; Dr. A. J. Crowell, Charlotte; Dr. John A. Ferrell, State Secretary, Raleigh.

Committee on Records of the Society: Dr. John A. Ferrell, State Secretary, Raleigh; Dr. I. H. Manning, Chapel Hill; Dr. J. Howell Way, Waynesville.

Committee on Medical Defense: Dr. Jas. M. Parrott, Kinston; Dr. M. H. Fletcher, Asheville; Dr. W. S. Rankin, Raleigh; Dr. G. W. Pressly, Charlotte; Dr. H. A. Royster, Raleigh.

Committee on History of Society Members (same as the members of the Committee on Obituaries): Dr. John A. Ferrell, Raleigh; Dr. E. G. Moore, Elm City; Dr. A. W. Knox, Raleigh; Dr. M. L. Stevens, Asheville; Dr. D. J. Hill, Lexington; Dr. A. J. Crowell, Charlotte; Dr. Oscar McMullan, Elizabeth City.

Committee on Constitution and By-Laws (continued): Dr. A. A. Kent, Lenoir; Dr. G. T. Sikes, Grissom; Dr. F. H. Holmes, Clinton.

All members of the Society who may attend the International Congress of Medicine in London were appointed delegates to represent the State Society.

REPORT OF NOMINATING COMMITTEE.

Dr. A. A. Kent, *Chairman.*
Dr. J. W. Long, *Secretary.*

Your Committee on Nominations beg leave to submit the following nominations:

For President, Dr. Jas. M. Parrott, Kinston.
For First Vice-President, Dr. E. T. Dickinson, Wilson.
For Second Vice President, Dr. J. T. J. Battle, Greensboro.
For Third Vice-President, Dr. D. E. Sevier, Asheville.

For Councilors:
First District—Dr. J. L. Spruill, Columbia.
Second District—Dr. K. P. B. Bonner, Morehead City.
Third District—Dr. L. B. Evans, Clarkton.
Fourth District—Dr. M. M. Saliba, Wilson.
Fifth District—Dr. Peter John, Laurinburg.
Sixth District—Dr. R. L. Felts, Durham.
Seventh District—Dr. A. J. Crowell, Charlotte.
Eighth District—Dr. W. M. Jones, Greensboro.
Ninth District—Dr. David J. Hill, Lexington.
Tenth District—Dr. M. L. Stevens, Asheville.

For Orator, Dr. John R. Irvin, Charlotte.
For Essayist, Dr. A. S. Pendleton, Raleigh.
For Leader of Debate, Dr. D. S. George, Marshallburg.

For Committee on Scientific Work:
Dr. H. A. Royster, Raleigh.
Dr. H. Haywood, Jr., Raleigh.
Dr. J. A. Ferrell, Raleigh *(ex officio* chairman).

For Committee on Public Policy and Legislation:
Dr. Albert Anderson, Raleigh.
Dr. L. B. McBrayer, Asheville.
Dr. G. G. Thomas, Wilmington.
Dr. Jas. M. Parrott, Kinston *(ex officio).*
Dr. J. A. Ferrell, Raleigh *(ex officio).*

For Committee on Publication:
Dr. E. C. Register, Charlotte.
Dr. J. Howell Way, Waynesville.
Dr. John A. Ferrell, Raleigh *(ex officio* chairman).

For Committee on Finance:
Dr. D. A. Stanton, High Point.
Dr. Oscar McMullan, Elizabeth City.
Dr. C. A. Abernethy, Raleigh.

For Committee on Obituaries:
Dr. E. G. Moore, Elm City.
Dr. A. W. Knox, Raleigh.
Dr. M. L. Stevens, Asheville.

For Chairman of Committee on Arrangements:
Dr. Albert Anderson, Raleigh.

For Delegates to South Carolina Medical Association:
Dr. W. O. Nesbitt, Charlotte.
Dr. C. Banks McNairy, Lenoir.
Dr. G. A. Garrison, Gastonia.
Dr. Sevay Highsmith, Fayetteville.
Dr. Tate Moore, Wilmington.
Dr. I. M. Taylor, Morganton.

For Delegates to Virginia Medical Association:
Dr. B. K. Hayes, Oxford.
Dr. T. L. Ginn, Goldsboro.
Dr. J. W. McGehee, Reidsville.
Dr. H. T. Bahnson, Winston-Salem.
Dr. D. A. Stanton, High Point.

Place of meeting, Raleigh.
Time of meeting, June 16, 1914.

Dr. L. B. McBrayer: I move that we adopt the report of the Committee on Nominations as a whole.

Carried.

Dr. A. A. Kent: I think as a matter of information it is due this body to know what a cordial and whole souled invitation we had extended to us to go to the city of Durham next year. We have chosen Raleigh, and I think we have chosen well, but I want you to know how cordially and earnestly we were invited to go to Durham.

Dr. J. W. Long, Greensboro: In view of the increasing amount of scientific work which this Society is doing, and of the further fact that when we have a three days' session we have only two evenings at our disposal, I desire to introduce a resolution to the effect that the positions of orator and essayist be abolished. I do this remembering with appreciation that on one occasion you honored me with the position of orator. I want to say that the position has on many occasions been graced with a great deal of wit, eloquence and learning. But it seems to me that the limit has about been reached, and what we heard last evening can hardly be surpassed. Therefore it is time for us to quit being entertained and give more time to work. I move that this resolution be referred to the Committee on Constitution and By-Laws.

Motion seconded and carried unanimously.

Dr. L. B. McBrayer, Asheville: I feel that it would not be proper for this House of Delegates to adjourn without expressing our appreciation of the efficiency and ability with which our President has presided over this session. It is entirely due to his ability as a presiding officer that we have been able to move along with dispatch and get through with the program and get everything done in order. I am sure it would be impossible for us to have a better presiding officer than we have had. As I listened last night to the report of the Committee on Obituaries, and heard the eulogies delivered on our departed members, I felt that if these expressions had been given while our friends could have heard them it would have been much better. I could not let this session adjourn without expressing my appreciation and that of every member of the Society who has been present.

I wish to say that our Secretary is to be congratulated on the efficient work he has done during the past year. He has labored under great difficulties, and the system he has already placed in the office of the Secretary will be in the days to come of immense value to this Society. I know that he will make other improvements, and I want him to feel that we appreciate his work and that no one of us has failed to note it, and that we congratulate him and would suggest that he go on.

Dr. J. P. Munroe: The Chair appreciates the very kind words of Dr. McBrayer and the kind remarks of the various members of the Society as to the work of the Secretary.

Dr. A. A. Kent: I believe that the House of Delegates has completed its work, and I therefore move that the House of Delegates be adjourned *sine die.*

Motion carried and House of Delegates adjourned.

ORGANIZATION OF BOARD OF COUNCILORS.

Dr. M. L. Stevens called the board to order and was elected chairman for the ensuing term.

Dr. K. P. B. Bonner was elected Secretary for the ensuing term.

Members present, Drs. Stevens, Saliba, Crowell, Hill, Johns, Evans, and Bonner.

A general plan of work for the coming year was discussed and it was decided to leave the plan of campaign to each Councilor in his particular district.

A motion to adjourn prevailed.

K. P. B. Bonner,
Secretary.

Notice to County Societies:

1. The annual election of officers should be held in December.

2. The 1914 dues should be paid at the December, 1913, meeting, or at any rate before January 1, 1914.

3. Any error in the matter of names, initials, year licensed, college attended, etc., should be reported to the Secretary. The information recorded is that sent in by the individual doctors, the secretaries of the county societies, or taken from the Transactions of former years.

4. The recent meeting of the Society changed the by-laws so that the secretaries of county societies are required to make their report to the Secretary of the State Society of membership and dues not later than January 31. The members should pay promptly so that he can carry out his responsibility.

REPORT OF THE

Board of Medical Examiners

OF THE

STATE OF NORTH CAROLINA

ANNUAL SESSION

Morehead City, June 10, 1913

The Board of Medical Examiners of the State of North Carolina met in regular session on June 10, 1913, at Morehead City, N. C., with President W. W. McKenzie in the chair. All the members of the Board were present. Their names and the branches upon which they examined are given below. The examinations were written, oral and practical. On some of the branches the written questions counted as sixty per cent of the entire examination, and on others as eighty per cent. The value of each paper is given with the questions.

138 applied foro license.
25 were granted license by reciprocity.
113 took the examinations.
1 withdrew.
35 failed.
77 were granted license by examination.

Dr. John Bynum, of Winston-Salem, was elected President of the Board for the coming year.

LICENSED BY RECIPROCITY.

Name and Address	*College*	*Year*	*State*
Beekwith, R. P., Plymouth, Pa.	University of Pennsylvania	1911	Maryland
Baerecke, G. H., Deland, Fla.	Univ. Coll. Med.	1909	Florida
Bingham, Geo. P., Newport, Tenn.		----	Tennessee
Denson, H. A., Bennett, N. C.	P. &. S. Indianapolis	1887	Indiana
Dunham, R. W., Bemis, W. Va.	P. &. S. Balto	1908	West Virginia
Fresh, Wm. M., Weaverville, N. C.	Med.-Chi. Phil.	1906	Georgia
Goddard, W. W., Schnectady, N. Y.	Albany Med.	1894	New York
Johnston, Jas. G., Chester, S. C.	Vanderbilt Univ.	1899	South Carolina
Kerr, M. C., West Hickory, Pa.	Starling Med.	1892	Pennsylvania
Kornegay, Geo. E., Kinston, N. C.	Tulane	1907	Louisiana
LeGwin, J. B., Wilmington, N. C.	Tulane	1911	Louisiana
McKnight, V. H., Halifax, N. C.	Univ. Md.	1911	Maryland
McDowell, F. C., Wakefield, N. C.	Univ. Pa.	1902	Pennsylvania
Magruder, L. F., Albemarle, N. C.	Tulane	1905	Louisiana
Miller, O. O., Asheville, N. C.	Univ. Louisville	1911	Kentucky
Moore, H. T., Wilmington, N. C.	Tulane	1910	Louisiana
Reeves, Chas. R., Greensboro, N. C.	Univ. of South	1906	Tennessee
Simpson, Wm. D., Abbeville, S. C.	Univ. of South	1904	South Carolina
Smith, D. J., Roan Mountain, Tenn.	Univ. of Tenn.	1894	Tennessee
Smith, B. R., Asheville, N. C.	Jefferson	1911	Delaware
Sloan, H. L., Winston-Salem	Univ. of Pa.	1911	New York
Stirrett, J. R., Haw River, N. C.	Univ. Coll. Med.	1908	Virginia
Swengle, D. H. Raeford, N. C.	Univ. of Md.	1908	South Carolina
Valk, A. deTalma, Winston-Salem, N. C.	Johns Hopkins	1910	Maryland
Watts, R. E., Oriental, N. C.	Med. Coll. Va.	1911	Virginia

LICENSED AFTER EXAMINATION.

Name and Address	*College*	*Year*	*Preliminary Edueation*
Allen, Chas. I., Wadesboro	Columbia	1913	B.S.
Brown, Vanderbilt (col.), Durham	P. & S. Boston	1912	A.B.
Boyden, W. C., Hickory	N. C. Med.	1913	2 years college
Blalock, B. K., Norwood	Univ. Md.	1913	College
Buchanan, L. T., Oxford	Jefferson	1913	A.B.

Name and Address	*College*	*Year*	*Preliminary Education*
Bunn, J. J., Concord	N. C. Med.	1912	1 year college
Codrington, C. B., (col.), Raleigh	Leonard	1913	1 year college
Choate, P. L., Sparta	N. C. Med.	1913	High school
Chester, P. J., Charlotte	N. C. Med.	1913	High School
Caddell, G. C., Carthage	N. C. Med.	1913	High School
Coltrane, W. E., Lucama	Med. Coll. of Va.	1912	2 years college
Craven, F. C., Ramseur	Univ. Md.	1913	High School
Cordice, J. W. V. (col.) Greensboro	Howard	1911	High School
Caudill, E. L., Whitehead	Med. Coll. of Va.	1913	High School
Daniels, F. L., (col.), Salisbury	Leonard	1910	B.S.
Davis, J. M., Hiddenite	Columbia	1913	B.S.
Davis, J. W., Statesville	Univ. of Pa.	1913	High School (led class)
Drane, Robt., Edenton	Univ. of Pa.	1913	A.B.
Edwards, V. E., Stokesdale	Univ. of Md.	1913	College
Fountain, J. A., (col.), Roxboro	Leonard	1913	College
Farrier, J. W., Kenansville	Univ. of Pa.	1912	M.E., Cornell
Freeman, M. R., Middlesex	Univ. Col. Med.	1913	College
Flack, R. E., Rutherfordton	Johns Hopkins	1913	A.B.
Grady, L. V., Seven Springs	N. C. Med.	1913	High School
Gibson, L. O., Statesville	N. C. Med.	1913	B.S.
Glascock, H. W., Raleigh	Chic. Coll. Med.-Sur.	1913	High School
Helsabeck, R. S., Rural Hall	N. C. Med. Coll.	1913	High School
Hunsucker, C. R., Conover	N. C. Med.	1913	A.B.
Hemphill, C. H., Marion	Univ. of Md.	1913	1 year college
Hayworth, C. A., Asheboro	Univ. of Md.	1913	High School
Jennings, R. G., Charlotte	N. C. Med.	1913	College
Johnston, W. W., Charlotte	N. C. Med.	1913	High School
Jones, B. L., Raleigh	Columbia	1913	College
King, A. T., Richmond, Va.	Univ. of Va.	1911	M.A.
Kendrick, R. L., Rock Hill, S. C.	Univ. of Va.	1913	B.A.
Long, B. L., Rutherfordton	N. C. Med.	1913	High School
Lucas, P. E., Currie	Univ. Col. Med.	1913	High School
McLelland, W. D., Mooresville	Jefferson	1913	College
McDaniel, C. B., Forest City	N. C. Med.	1913	2 years college
Moore, D. B., Granite Falls	Univ. Col. Med.	1913	2 years college
Moseley, Z. B., Kinston	Univ. Coll. Med.	1913	2 years college
Mitchell, G. W., Ahoskie	Univ. Coll. Med.	1913	High School

Name and Address	*College*	*Year*	*Preliminary Education*
Matthews, J. C., Charlotte	N. C. Med.	1913	College
Moxley, J. C., Piney Creek	N. C. Med.	1913	High School
Moorefield, L. J., Guilford College	N. C. Med.	1913	High School
Morris, P. J. (col.), Raleigh	Leonard	1913	A.B.
Ogburn, H. H., Greensboro	Johns Hopkins	1913	College graduate
Paine, Estes, Clemmons	Univ. of Tex.	1906	College
Pritchard, G. L., Swansboro	Univ. Col. of Med.	1913	2 years college
Parker, Mary M., Georgetown, S. C.	N. C. Med.	1913	College graduate
Petteway, G. H., Richlands	N. C. Med.	1913	High School
Pratt, T. R., Madison	Univ. of Md.	1913	High School
Person, H. M., Fremont	N. C. Med.	1913	High School
Quinn, R. F., Chinquapin	N. C. Med.	1912	High School
Rodgers, W. D., Warrenton	Jefferson	1913	2 years college
Reeves, J. L., Leicester	Vanderbilt	1913	2 years college
Reeves, R. J., Leicester	Vanderbilt	1913	3 years college
Robertson, J. F., Charlotte	Univ. of Pa.	1913	College
Rainey, W. T., Salisbury	Univ. Coll. Med.	1913	High School
Stixrud, T. T., Charlotte	N. C. Med.	1913	High School
Steele, F. S., Turnersburg	Med. Coll. of Va.	1913	2 years college
Speas, D. C., Bethania	Univ. Md.	1911	
Taylor, F. R., Haverford	Univ. of Pa.	1913	B. S. Haverford
Tyson, E. F. (col.), Charlotte	Howard	1911	A.B.
Turlington, H. C., Clinton	Univ. Col. Med.	1913	High School
Templeton, J. Y., Mooresville	Jefferson	1913	B.S.
Vernon, C. T., Burlington	Jefferson	1913	B.S.
Wright, S. G., Shawsboro	Univ. Md.	1904	2 years college
Williamson, J. C. (col.), Winston-Salem	Leonard	1913	College
Walker, N. D. (col.), Raleigh	Leonard	1913	College
Wilkins, J. W., Rose Hill	Med. Coll. of Va.	1913	1 year college
Wilkins, R. B., Linden	N. C. Med.	1913	College
Williams, T. G., Rose Hill	G. W. Univ.	1911	1 year college
Williams, L. L., Marion	Md. Med.	1913	1 year college
Whitaker, F. S., Kinston	N. C. Med.	1913	College
Wyatt, Wortham, Wadesboro	Univ. of Pa.	1913	A.B., Univ. N. C.
Wheeler, G. A., Wilmington	Univ. of Va.	1913	1 year college
Wadsworth, W. H., Concord	Jefferson	1913	1 year college

EXAMINATION PAPERS

PRACTICE OF MEDICINE.

H. H. Dodson, M.D., Greensboro.

1. What is aphasia?
   (*a*) What is the difference between sensory and motor aphasia?
   (*b*) Where is the central lesion in motor aphasia located?
2. What is multiple neuritis?
   (*a*) Give etiology, diagnosis and prognosis?
3. What is diabetes?
   (*a*) What are the modern theories concerning its etiology?
   (*b*) Discuss the carbohydrates in the treatment.
4. Describe briefly the character and situation of pain in gastralgia, ulcer ulcer of the stomach, lead colic, general peritonitis, appendicitis, gallstone colic and kidney colic.
5. What are the chief causes of secondary anæmia?
   (*a*) How would you differentiate secondary anæmia from primary pernicious anæmia?
6. Define aneurisms. How may they be classified?
   (*a*) How would you differentiate between aneurism of the ascending and transverse aorta?
7. What are the chief causes for obstruction of the common bile duct producing jaundice?
   (*a*) Give the clinical manifestations produced by obliteration at Vater's ampulla.
8. Define pellagra.
   (*a*) Give the clinical history.
   (*b*) Give the most recent treatment, and the mode of administration.

CHEMISTRY AND DISEASES OF CHILDREN.

J. L. Nicholson, M.D., Richlands.

1. Describe the process of manufacture of chloroform, ether and nitrous oxide, and express in equations the reactions respectively occurring in their formation.
2. Review briefly the theory of ions or of electrolytic dissociation.
3. The composition of normal urine represents the approximate equilibrium between the *acidic* and the *basic* end-products of metabolism. Name several food substances which contribute to the establishment of *acid conditions*, and several others which contribute, in like degree, to the establishment of *basic conditions*.
4. What two sugars are especially concerned in the anabolism of the tissues? What organ converts levulose and lactose into glucose? How would you determine the limit of assimilation of the various sugars?
5. What are fats chemically? In what two ways do fats form in the organism? How is the composition of the fats of the diet affected in the

process of digestion and assimilation? What is the significance of excessive unresolved fat and of fatty acid crystals in the feces? What is the final fate of the fat in the body?

6. State the general plan of the enzymotic hydrolysis of the protein molecule, and designate the form which the resulting products must assume prior to absorption and nutrification.
7. Discuss the properties, the relative merits, and the indications for using the various carbohydrates in infant feeding.
8. Discuss the question of high protein feeding in children with particular reference to (*a*) indications for its use, (*b*) the chemical and physical changes resulting in the feces, and (*c*) its influence over general metabolism.
9. Describe Kernig's and Babinski's reflexes, and give their respective diagnostic value.
10. Describe congenital atelectasis, and state the best method of remedying the condition.

PHYSIOLOGY AND HYGIENE.

BENJ. K. HAYS, M.D., Oxford.

1. What do you consider the chief difference in the function of epithelial and connective tissue?
2. Name classes of foods.
   Which of these is alone capable of sustaining life?
   What chemical element is usually spoken of as the chief characteristic of this one?
   What per cent of the molecule is composed of this element?
   In the form of what substance is this element chiefly eliminated?
   Where is this substance formed?
3. Name enzymes found in alimentary canal, place found and function.
4. Give classification of white blood corpuscles and per cent of each found in normal blood.
5. What is the fluid in muscle tissue called?
   What is its chemical reaction?
   How is this affected by fatigue? by death? Explain.
6. Trace circulation of blood through kidney.
7. Define Wallerian degeneration.
8. Give distribution of pneumogastric nerve and function in each locality. (That is, state class of nerve in each locality.)
9. What is the significance of colon bacilli in drinking water?

ANATOMY, PATHOLOGY, HISTOLOGY, AND BACTERIOLOGY.

DR. W. W. MCKENZIE, Salisbury.

1. Locate and describe the cecum.
2. Give origin, course and distribution of the seventh nerve.
3. Describe the right and left subclavian veins.
4. Describe the diaphragm, its principal openings and nerve supply.
5. Describe the mastoid portion of the temporal bone, and name the muscles attached thereto.

6. Name the ligaments of the hip joint.
7. Relate the difference between a virgin uterus and the uterus of a multipara.
8. What anatomic parts are involved in the descent of the testes?
9. Describe the lesion found in the different forms of cirrhosis of the liver.
10. Give the gross pathology of amebic dysentery. Describe the organism giving rise to it and name the pathologic condition of the liver often associated with it.

GYNECOLOGY AND OBSTETRICS.

L. B. McBrayer, M.D., Asheville.

1. Source, composition and specific gravity of liquor amnii.
2. Discuss briefly the physiology of the transmission of insanity, feeble mindedness, or other mental or moral traits or characteristics, or physical defects or characteristics, from parent to offspring. Give Mendel's formula for heredity.
3. What constitutes the pelvic floor?
4. What are some of the indications for producing sterility in a woman and describe the proper operation.
5. Differentiate uterine polypus and chronic inversion of the uterus, and give proper treatment in each case.
6. (a) What is the normal course of delivery in occipito-posterior position?
   (b) In case the normal course is not followed, what is the method of delivery?
   (c) And in the latter case what is the percentage of mortality to mother and child?
7. (a) What are some of the diseases of the breast liable to occur during the puerperium?
   (b) What is the treatment for each?
   (c) What prophylactic measures should be instituted?
8. (a) State some of the indications, and (b) describe what you consider the best operation for emptying the uterus at the second month of utero-gestation, (c) at the sixth month.

MATERIA MEDICA AND THERAPEUTICS.

John Bynum, M.D., Winston-Salem.

1. Mention the conditions which affect the dosage of medicines. Name the methods of introducing medicines into the circulation.
2. Give the physiologic action of saline purgatives and their therapeutic uses.
3. Name the three most used preparations of opium and state how much of each represents one grain of opium. Explain the constipating action of opium.
4. Name an antidote for each of the following, and state whether this is physiological or chemical: arsenic, opium, copper, and strychnine.
5. State what remedies are used to reduce temperature. Explain how they accomplish this result, and describe how used.
6. What drugs would you use to stimulate the heart's action, to produce

emesis, to control hemorrhage, to produce sleep, to relieve pain. Doses of each.

7. Name several drugs that render urine alkaline. Give their doses. What class of acids would you use to acidify alkaline urine? Give an example. Give the composition of linimentum calcis and therapeutic uses.
8. What is incompatibility in medicine, and what are the different kinds of incompatibles? Give an example of each.

SURGERY.

JOHN C. RODMAN, M.D., Washington, N. C.

1. Name every disease or condition (occurring to you) involving the genitourinary tract, which might produce hæmaturia.
2. Describe the operative technique of a resection of the elbow joint, naming the important structures to avoid.
3. Name: (a) The varieties of dislocation of the shoulder joint.
   (b) Diagnostic symptoms of a subcoracoid.
   (c) Technique of reduction of a subcoracoid.
4. Give the surgical guides for the location of the lingual artery, for the purpose of ligation.
5. How would you treat a compound fracture of the tibia at its middle third?
6. Give symptoms and treatment of an osteo-myelitis of the tibia.
7. Define (a) Chancroid or soft chancre. (b) How would you treat a chancroid or soft chancre of the penis? (c) What is its incubation period?
8. Describe the operative technique of a tracheotomy.

Notice to County Societies:

1. The annual election of officers should be held in December.

2. The 1914 dues should be paid at the December, 1913, meeting, or at any rate before January 1, 1914.

3. Any error in the matter of names, initials, year licensed, college attended, etc., should be reported to the Secretary. The information recorded is that sent in by the individual doctors, the secretaries of the county societies, or taken from the Transactions of former years.

4. The recent meeting of the Society changed the by-laws so that the secretaries of county societies are required to make their report to the Secretary of the State Society of membership and dues not later than January 31. The members should pay promptly so that he can carry out his responsibility.

Alphabetical List of Members of the Medical Society with Postoffice Address

Name.	*Address.*
Abel, J. F.	Waynesville
Abernethy, A. B.	Reidsville
Abernethy, C. O.	Raleigh
Abernethy, E. A.	Chapel Hill
Abernethy, H. N.	Denver
Abernethy, J. S.	Charlotte
Absher, D. C.	Mt. Airy
Adams, C. A.	Durham
Adams, C. E.	Gastonia
Adams, D. C.	Kittrell
Adams, J. L.	Asheville
Adams, M. R.	Statesville
Adams, N. B.	Murphy
Adkins, E. H.	Rosemary
Akerman, Jos.	Wilmington
Alexander, Annie L.	Charlotte
Alexander, J. R.	Charlotte
Alford, A. E. B.	Greensboro
Allan, Wm.	Charlotte
Allen, B. G.	Henderson
Allen, J. A.	New London
Allen, R. L.	Waynesville
Allhand, J. M.	Cliffside
Allred, E. B.	Mt. Airy
Ambler, C. P.	Asheville
Anders, M. G.	Gastonia
Anderson, A.	Denton
Anderson, Albert	Raleigh
Anderson, Chas. A.	Burlington
Anderson, J. A.	McAdenville
Anderson, J. G.	Asheville
Anderson, J. N.	Albemarle
Anderson, P. V.	Richmond, Va.
Anderson, T. E. (Hon.)	Statesville
Anderson, Wm. S.	Wilson
Andrews, N. H.	Pembroke
Andrews, R. M.	Rutherfordton
Andrews, V. L.	Mt. Gilead
Anthony, J. E.	Kings Mountain
Archer, I. J.	Black Mountain
Archey, L. M. (Hon.)	Concord
Armfield, Romulus	Marshville
Arnold, L. J.	Lillington
Asbury, F. E.	Worthville
Ashby, T. B.	Mt. Airy
Ashcraft, J. E.	Monroe
Ashworth, B. L.	Marion
Ashworth, W. C.	Greensboro
Attmore, G. S.	Stonewall
Austin, F. DaCosta	Charlotte
Austin, J. A.	Charlotte
Austin, J. W.	High Point
Averitt, K. G.	Cedar Creek
Aydlett, H. T.	Elizabeth City
Aydlett, J. P.	Earl
Ayers, T. B.	Proctorville
Baggett, L.	Tabor
Bahnson, H. T.	Winston-Salem
Baird, C. A.	Mt. Airy
Baird, J. H.	Mars Hill
Baird, J. W.	Mars Hill
Baker, J. M.	Tarboro
Ball, M. W.	Newport
Ballard, A. M.	Asheville
Banner, C. W.	Greensboro
Barefoot, M. L.	Dunn
Barker, C. S.	Trenton
Barnes, B. F.	Elm City
Barron, A. A.	Charlotte
Basnight, T. G.	Greenville
Bass, H. H.	Henderson
Bass, S. P.	Tarboro
Battle, J. T. J.	Greensboro
Battle, K. P., Jr.	Raleigh
Battle, S. W.	Asheville
Baynes, R. S.	Hurdle Mills
Beall, L. G.	Greensboro
Beall, W. P.	Greensboro
Bellamy, R. H.	Wilmington
Bellamy, W. J. H.	Wilmington
Best, H. B.	Wilson
Bethune, A. C.	Aberdeen
Biggs, M. H.	Rutherfordton
Bitting, N. D.	Durham
Bizzell, T. M.	Goldsboro
Black, J. C.	Harrisburg
Blair, A. McN.	Southern Pines
Blair, J. M.	Monroe
Blair, M. P.	Marshville
Blount, F. H.	Swansboro
Blount, J. G.	Washington
Boaz, T. A.	Stoneville
Bobbitt, B. H.	Louisburg
Boddie, N. P.	Durham
Boger, D. T.	Unionville
Bolton, M.	Rich Square
Booker, L. S.	Durham
Boone, W. H.	Durham
Bonner, K. P. B.	Morehead City
Bonner, M.	New Bern
Booth, T. L.	Oxford
Bornneman, J. H.	Wilmington
Bostic, W. C.	Forest City
Bowles, C. P.	Wilmington
Bowling, E. H.	Durham

Name.	*Address.*
Bowman, E. H.	Biscoe
Bowman, H. P.	Greensboro
Boyles, A. C.	Durham
Boyles, J. H.	Greensboro
Braddy, W. H.	Greensboro
Bradford, R. H.	Burgaw
Brawley, R. V.	Salisbury
Brenizer, A. G.	Charlotte
Briggs, H. H.	Asheville
Brittle, P. C.	Conway
Broadshire, W. H.	Roxboro
Brooks, B. U.	Durham
Brookshire, H. G.	Leicester
Brothers, J. E.	Goldsboro
Brown, F. L.	Scott's Hill
Brown, G. A.	Mt. Ulla
Brown, G. W.	Raeford
Brown, J. P.	Fairmont
Brown, J. S.	Hendersonville
Brownson, W. C.	Asheville
Bryan, L. D.	Snead's Ferry
Buchanan, E. J.	Lexington
Buckner, J. M.	Swannanoa
Buckner, R. G.	Asheville
Bullock, R. W.	Wilmington
Bullock, E. S.	Wilmington
Bullock, B. W.	Hester
Burbage, T. I.	Como
Burbank, T. S.	Wilmington
Burleyson, L. N.	Concord
Burnett, J. E.	Mars Hill
Burrus, J. T.	High Point
Burt, S. P.	Louisburg
Burtt, B. W.	New Hill
Busby, J. G.	Spencer
Bynum, J.	Winston-Salem
Bynum, W H.	Germanton
Caldwell, D. G	Concord
Caldwell, J. A.	Salisbury
Caldwell, M. M.	Wilmington
Callaway, A. W.	Asheville
Campbell, A.	Statesville
Campbell, A. C.	Raleigh
Carlton, R. L.	Kernersville
Carr, R. L.	Rose Hill
Carroll, E. D. D.	Raleigh
Carroll, J. L.	Asheville
Carroll, J. W.	Wallace
Carroll, Robt. S.	Asheville
Carstarphen, W. T.	Wake Forest
Carter, Geo. H.	King's Creek
Carter, H. W	Washington
Cason, H. M. S.	Edenton
Caton, G. A.	New Bern
Caudle, H. H.	Kannapolis
Caviness, Z. M	Raleigh
Champion, C. O.	Mooresboro
Chaney, T. M.	Winston
Chapin, H. T.	Pittsboro
Chapin, W. B.	Townsville
Chapman, Geo. M.	Morven
Cheatham, Arch	Durham
Cheatham, Goode	Brevard
Cheesborough, T. P	Asheville
Choate, G. W.	Rockwell
Clark, G. L.	Clarkton
Clarke, F. M.	Middletown
Clemenger, F. J.	Asheville
Clifford, J. S.	Charlotte
Clingman, J. J	Cana
Clodfelter, Chas. M.	Lexington
Clontz, W. J.	Alexander
Cochran, J. S.	Fayetteville
Cocke, C. H.	Asheville
Cocke, J. E.	Asheville
Coe, S. C.	High Point
Coffey, L. H.	Lenoir
Coggeshall, G. A.	Oxford
Cohn, B. W.	South Mills
Colby, C. DeWitt	Asheville
Cole, W. F.	Greensboro
Coleman, G. S.	Kenly
Coley, W. R	Shallotte
Collins, J. A.	Enfield
Coltrane, W. E.	Lucama
Conier, N. L.	Durham
Cooke, Q. H.	Woodland
Cooper, G. M.	Clinton
Corpening, O. S.	Granite Falls
Costello, M. J.	Asheville
Costner, G. H	Lincolnton
Costner, T. F.	Charlotte
Cotton, C. E.	Black Mountain
Councill, J. B.	Salisbury
Couther, R. S.	Charlotte
Covington, J. M., Jr.	Wadesboro
Cox, B. F.	Palmerville
Cox, E. L.	Jacksonville
Cox, T. A.	Hertford
Craig, S. D.	Winston-Salem
Cranmer, J. B.	Wilmington
Crocker, Wm. D.	Warsaw
Croom, A. Bascom	Maxton
Croom, J. D.	Maxton
Crowell, A. J.	Charlotte
Crowell, L. A.	Lincolnton
Crowell, S. M.	Charlotte
Crowell, W. H.	Whiteville
Crump, W. L.	Salisbury
Crumpler, Paul	Roseboro
Cummins, M. P.	Reidsville
Currie, D. S.	Parkton
Currie, E. W.	Salisbury
Daligny, C.	Troy
Dalton, D. N.	Winston
Dameron, E. L.	Star
Daniel, N. C.	Oxford
Daniels, O. C.	Oriental

Name.	*Address.*
Daniels, R. L.	Swansboro
Davidson, J. E. S.	Charlotte
Davis, A. P.	Winston
Davis, J. C.	Candler
Davis, T. W.	Winston
Davis, W. W.	Belmont
DeAmon, J. McC.	Charlotte
Dees, D. A.	Bayboro
Dees, R. E.	Greensboro
Dees, R. O.	Greensboro
Denny, W. W.	Pink Hill
Denson, H. A.	Bennett
Dick, J. V.	Gibsonville
Dickie, H. G.	Town Creek
Dickinston, E. T.	Wilson
Dickson, A. P.	Raeford
Dillard, R.	Edenton
Discsway, A. W.	Plymouth
Dixon, G. E.	Hendersonville
Dixon, W. H.	Ayden
Dodson, H. H.	Greensboro
Dosher, J. A.	Southport
Dowd, J. A.	Biscoe
Drafts, A. B.	Hendersonville
Duffy, C.	New Bern
Duffy, F.	New Bern
Duffy, L.	New Bern
Duffy, R. A.	New Bern
Duguid, J. A.	Vanceboro
Duncan, C. L.	Beaufort
Duncan, G. F.	Greensboro
Duncan, J. E.	North Wilkesboro
Dunlap, J. M.	Ansonville
Dunlap, L. V.	Albemarle
Dunn, W. L.	Asheville
Eagles, Chas. S.	Saratoga
Earley, W. W.	Marietta
Eason, Oscar	Pinetop
Eckel, O. F.	Asheville
Eddleman, H M.	Gastonia
Edgerton, Jas. L.	Hendersonville
Edwards, B. O.	Landis
Edwards, G. C.	Hookerton
Edwards, J. D.	Siler City
Edwards, V. E.	Stokesdale
Elias, L W.	Biltmore
Ellington, J. H.	Sandy Ridge
Ellington, Samuel	Wentworth
English, E. S.	Brevard
Ervin, E. W.	Laurinburg
Eubanks, J. B.	Monroe
Evans, L. B.	Clarkton
Evans, W. E.	Rowland
Everington, G. D.	Laurinburg
Exum, W. P., Jr.	Goldsboro
Faison, I. W.	Charlotte
Faison, J. M.	Faison
Faison, W. W.	Goldsboro
Faison, Y.	Charlotte

Name.	*Address.*
Falls, O. G	Kings Mountain
Farthing, L. E.	Pittsboro
Fassett, B. W.	Durham
Faucett, T. S.	Burlington
Fearing, I.	Elizabeth City
Fearing, Z.	Elizabeth City
Fearington, J. P.	Winston
Felts, R. L.	Durham
Fenner, E. F.	Henderson
Ferguson, H. B.	Halifax
Ferrell, J. A.	Raleigh
Fields, R. M.	Goldston
Finney, J. R.	Boonville
Fitzgerald, J. Y.	Indian Trail
Fleming, M. J.	Hamilton
Fletcher, M. H.	Asheville
Flint, S. S.	Rural Hall
Flippin, J. M.	Mt. Airy
Flippin, R. E. L.	Pilot Mountain
Flippin, S. T.	Sylva
Flowers, B. G.	Granite Falls
Flowers, C. A.	Columbia
Floyd, A. G.	Fair Bluff
Floyd, J. W.	Tabor
Floyd, L. D.	Cerro Gordo
Floyd, R. P.	Louisburg
Foil, M. A.	Mt. Pleasant
Fortune, A. F.	Greensboro
Fountain, W. M.	Greenville
Fox, T. I.	Franklinville
Fox, W. F.	Guilford
Frazer, H. T.	Asheville
Freeman, R. A.	Burlington
Furman, W. H.	Henderson
Galloway, W. C. (Hon.)	Wilmington
Gamble, J. R.	High Shoals
Gardner, G. D.	Asheville
Garren, R. H	Bessemer
Garrenton, Cecil	Coinjock
Garrison, D. A.	Gastonia
Gayle, E. M.	Morganton
Gentry, G. W.	Timberlake
George, D. S.	Marshallburg
Gibbon, R. L.	Charlotte
Gibbs, N. M.	New Bern
Gibson, J. S.	Gibson
Gibson, M. R.	Maxton
Gill, J. N.	Weaverville
Gill, R. J	Henderson
Gilmer, B. H.	Plymouth
Gilmer, C. S.	R.F.D. 6, Greensboro
Gilreath, F. H.	N. Wilkesboro
Ginn, I. L.	Goldsboro
Glenn, E. B.	Asheville
Glenn, H. F.	Gastonia
Glenn, L. N.	Gastonia
Gold, Chas. F.	Ellenboro
Goley, W. R.	Graham

Name.	*Address.*
Goodman, A. B.	Lenoir
Goodman, E. G.	Lauvale
Goodwin, A. W.	Raleigh
Gouger, George J.	Concord
Gove, Anna M.	Greensboro
Grady, J. C.	Kenly
Graham, B. R.	Wallace
Graham, Geo. A.	Raeford
Graham, Joseph	Durham
Graham, W. A.	Charlotte
Granger, Geo. J.	Concord
Grantham, W. L.	Lumberton
Gray, E. P.	Winston-Salem
Grayson, Chas. S.	High Point
Green, T. M.	Wilmington
Green, Wm. W.	Tarboro
Greene, A. W.	Ahoskie
Greene, J. B.	Asheville
Greenwood, B. H.	Waynesville
Greenwood, S. E.	Fletcher
Grier, C. T.	Carthage
Grier, S. A.	Harrisburg
Griffin, C. F.	Winton
Griffin, J. A.	Clayton
Griffin, O.	Bethel
Griffin, T. A.	Clayton
Griffin, Wm. R.	Morganton
Griffith, F. W.	Asheville
Grigg, W. T.	Lawndale
Griggs, J. B.	Elizabeth City
Griggs, W. T.	Poplar Branch
Guin, J. L.	Wilmington
Guion, L. E.	Waxhaw
Gunter, J. B.	McFarlan
Hackney, B. H.	Bynum
Halford, J. W.	Lillington
Hall, E. A.	Statesville
Hall, J. Clegg	Albemarle
Hall, Jas. K.	Richmond, Va.
Hall, Wright (Hon.)	Wilmington
Halsey, B. F.	Roper
Hammock, J. C.	Walkertown
Hamrick, T. G.	Shelby
Hand, E. H.	Pineville
Harbeck, E. V.	Weaverville
Hardee, P. R.	Stem
Harding, S. A.	Yadkinville
Harding, T. R.	Yadkinville
Hardison, M. H.	Creswell
Hardy, Ira M.	Kinston
Hargrove, R. H.	Robersonville
Hargrove, Wm. C.	Kinston
Harper, C. T.	Wilmington
Harper, J. H.	Snow Hill
Harper, J. M.	Hookerton
Harrell, Geo. N.	Murfreesboro
Harrell, S. N.	Tarboro
Harrill, L. B.	Caroleen
Harris, A. G.	Fairfield
Harris, A. H.	Wilmington
Harris, D. W.	Maxton
Harris, E. B.	Rutherfordton
Harris, F. R.	Henderson
Harris, I. A. (Hon.)	Alexander
Harris, J. H.	Franklinton
Harrison, A. S.	Enfield
Harrison, E.	Greensboro
Harrison, J. S.	Elm City
Hartsell, F. E.	Big Lick
Hassell, J. L.	Creswell
Hathaway, B. W.	Winfall
Hathcock, T. A.	Norwood
Hawes, S. J.	Dover
Hayes, R. B.	Fayetteville
Hays, B. K.	Oxford
Haywood, Hubert, Jr.	Raleigh
Headen, Wm. E.	Morehead City
Heighway, S. C.	Murphy
Heilig, H. G.	Salisbury
Henderson, R. B.	Franklinton
Hennessee, E. A.	Morganton
Herbert, F. L.	Andrews
Herbert, W. P.	Asheville
Herring, B. S.	Wilson
Herron, A. M.	Charlotte
Hickman, Mark	Hudson
Hicks, Calvin	Durham
Hicks, I. F.	Dunn
Hicks, Romeo	Henrietta
Hicks, W. N.	Durham
Highsmith, Chas.	Dunn
Highsmith, J. F.	Fayetteville
Highsmith, Seavy	Fayetteville
Hill, C. D.	Durham
Hill, D. J.	Lexington
Hill, J. H. (Hon.)	Germanton
Hill, J. N.	Murphy
Hill, W. J.	Albemarle
Hill, W. L.	R.F.D. 4, Lexington
Hilton, J. J.	Greensboro
Hodgin, H. H.	Red Springs
Hoggard, John T.	Atkinson
Hoggard, W. A.	Woodville
Holcomb, C. M.	Chestnut Ridge
Holloway, O. W.	North Side
Hollingsworth, E. W.	Mt. Airy
Hollingsworth, R. E.	Mt. Airy
Holloway, Robt. L.	West Durham
Holmes, F. H.	Clinton
Holt, Thos. J.	Wise
Holt, W. P.	Duke
Holt, Wm. T.	McLeansville
Honnett, J. H.	Wilmington
Hood, J. S.	Kings Mountain
Hooks, T.	Smithfield
Hooper, J. O.	Saluda
Hoover, C. H.	Crouse
Horton, Wm. C.	Raleigh
Horton, W. P.	North Wilkesboro
Houck, Albert	Morganton

Name.	*Address.*
Houser, E. A.	Fallston
Hovis, L. W.	Charlotte
Howe, W. B.	Hendersonville
Hoyt, A. C.	Washington
Hubbard, C. C.	Randleman
Hudson, W. L.	Dunn
Hughes, Geo.	Polloksville
Hughes, G. R.	Polloksville
Hughes, Thos. E.	Southport
Hinnant, Melford	Micro
Hunnicutt, Wm. J.	Asheville
Hunt, C. W.	Brevard
Hunt, Jno. F.	Casar
Hunter, H. H.	Pinetown
Hunter, J. V.	Asheboro
Hunter, L. W.	Charlotte
Hunter, M. C.	Huntersville
Huston, J. W.	Asheville
Hutchins, E. M.	N. Wilkesboro
Hutchinson, S. C.	Hope Mills
Hyatt, A. L.	Kinston
Hyatt, F. C.	Greensboro
Hyatt, H. O.	Kinston
Ingram, Chas. B.	Mt. Gilead
Irwin, H. C.	Roanoke Rapids
Irwin, J. R.	Charlotte
Jackson, W. L.	Trinity
Jacocks, W. P.	Raleigh
James, Wm. D.	Laurinburg
Jarboe, Parran	Greensboro
Jeffries, Thos. N.	Mulberry
Jenkins, Jno. H.	Gastonia
Jerome, J. R.	Wingate
Jett, S. G.	Reidsville
Jewett, R. D.	Winston
John, P.	Laurinburg
Johnson, B. C.	Bunn
Johnson, N. M. (Hon.)	Durham
Johnson, R. W.	Apex
Johnson, T. L.	Lumberton
Johnson, Wm. A.	Reidsville
Johnson, W. M.	Winston-Salem
Jonas, J. F.	Marion
Jones, A. G.	Walnut Cove
Jones, C. M.	Grimesland
Jones, E. H.	Swan Quarter
Jones, R. D. V.	New Bern
Jones, Wm. M.	Greensboro
Jordan, A. C.	Durham
Jordan, C. S.	Asheville
Jordan, G. E.	Gibsonville
Jordan, T. M.	Raleigh
Jordan, Wm. S.	Fayetteville
Joyner, T. O.	Severn
Juat, Francis	Raeford
Judd, J. M.	Cardenas
Jurney, P. C.	Turnersburg
Justice, Bailey	Marion

Name.	*Address.*
Kapp, H. H.	Winston
Kellum, W. D.	Union
Kennedy, G. W.	Beulaville
Kennedy, J. B.	Goldsboro
Kent, A. A.	Lenoir
Kernes, T. C.	Durham
Kerr, John D., Jr.	Clinton
Kerr, J. E.	Lilesville
Killian, R. B.	Lincolnton
King, M. N.	Durham
King, P. M.	Charlotte
King, R. M.	Concord
Kirby, Guy S.	Marion
Kirk, W. R.	Hendersonville
Kirkpatrick, L. R.	Maxton
Kizer, W. C.	Reepsville
Kluttz, F. E.	Troutman
Knight, J. B.	Williamston
Knight, W. P.	Greensboro
Knox, A. W.	Raleigh
Knox, John	Lumberton
Koonce, S. E.	Wilmington
Kornegay, Geo. E.	Kinston
Kornegay, L. W.	Mt. Olive
Lafferty, J. S.	Concord
Lafferty, R. H.	Charlotte
Lamm, I. W.	Lucama
Landen, J. F.	Chinquapin
Lane, Jno. L.	Faison
Lapham, Mary E.	Highlands
Lassiter, E. W.	Rich Square
Laster, P. D.	Lockville
Laton, J. F.	Albemarle
Lattimore, E. B.	Shelby
Laughinghouse, Chas. O'H.	Greenville
Lawrence, C. S.	Winston-Salem
Lee, L. V.	Lattimore
Lee, R. E.	Goldsboro
Lee, S. P. J.	Dunn
Leeper, D. H.	Hiddenite
Leggett, K.	Hobgood
Leinback, R. F.	Charlotte
Lewis, Geo. W.	Wilson
Lewis, H. W.	Jackson
Lewis, R. H. (Hon.)	Raleigh
Liles, N. P.	Elizabethtown
Lilly, Jas. M.	Fayetteville
Linville, A. Y.	Winston-Salem
Linville, W. C.	Winston-Salem
Lister, J. L.	Jackson
Livingston, Everitte	Gibson
Lloyd, B. B.	Venable
Lockett, E. A.	Winston-Salem
Long, B. L.	Hamilton
Long, E. F.	Denton
Long, F. M.	Oak City
Long, Geo. W. (Hon.)	Graham
Long, J. W.	Greensboro
Long, T. W.	Roanoke Rapids

Name.	*Address.*
Long, V. McKee	Winston
Long, W. T.	Roxboro
Lott, H. S.	Winston-Salem
Love, B. E.	Roxboro
Love, W. J. (Hon.)	Wilmington
Lovelace, T. B.	Henrietta
Lovill, Robt. J.	Dobson
Lowery, J. R.	Raleigh
Lumsden, W. J.	Elizabeth City
Lyday, A. E.	Penrose
Lyday, C. E.	Rosman
Lyle, S. H.	Franklin
Lynch, J. M.	Asheville
Lyon, E. H.	Bahama
McAnally, W. J.	High Point
McBrayer, L. B.	Asheville
McBrayer, T. E.	Shelby
McBryde, M. H.	Reidsville
McCain, H. W.	High Point
McCain, W. R.	Waxhaw
McCampbell, J.	Morganton
McCanless, W. L.	Danbury
McCanless, W. V.	Danbury
McClelland, J. O.	Maxton
McCombs, C. J.	Gastonia
McConnell, J. W.	Davidson
McCotter, S. E.	Bayboro
McCoy, T. M.	Mt. Holly
McCracken, C. M.	Fairview
McCracken, J. R.	Waynesville
McCullers, J. J. L.	McCullers
McDonald, A. A.	Jackson Springs
McDonald, A. D.	Wilmington
McFayden, H. L.	Waynesville
McFayden, R.	Concord
McGehee, J. W.	Reidsville
McGee, J. W.	Raleigh
McGougan, B. M.	Rockfish
McGougan, J. V.	Fayetteville
McGruder, L. F.	Albemarle
McIntosh, D. M.	Old Fort
McIver, E.	Jonesboro
McIver, Lynn	Sanford
McKaig, T. F.	Andrews
McKay, H. W.	Charlotte
McKay, J. F.	Buie's Creek
McKenzie, W. W.	Salisbury
McKethan, D. G.	Fayetteville
McKethan, J. A.	Fayetteville
McLaughlin, C. S.	Charlotte
McLaughlin, J. E.	Statesville
McLean, A.	Wagram
McLean, J. W.	Godwin
McLean, P.	Laurinburg
McLean, R. H.	Dunn
McLemore, G. A.	Clayton
McLeod, A. H.	Aberdeen
McLeod, G. M.	Carthage
McMahan, J. W.	Crestmont
McManas, W. L.	Bonlee
McMillan, B. F.	Red Springs
McMillan, J. L.	Red Springs
McMillan, J. M.	Hemp
McMillan, R. D.	Red Springs
McMillan, W. D.	Wilmington
McMullan, J. H.	Edenton
McMullan, O.	Elizabeth City
McNairy, C. B.	Lenoir
McNeill, J. W.	Fayetteville
McPhaul, W. A.	Lumberton
McPherson, J. W.	Haw River
McPherson, S. D.	Durham
MacNider, W. deB.	Chapel Hill
Macon, J. H.	Warrenton
Macon, P. J.	Warrenton
Malloy, S. A.	Yanceyville
Malone, J. E.	Louisburg
Mangum, C. S.	Chapel Hill
Mann, A. W.	Bynum
Mann, J. A.	Fairfield
Mann, J. E.	Lake Landing
Manning, I. H.	Chapel Hill
Manning, J. M.	Durham
Marriner, N. B.	Belhaven
Martin, S. L.	Leaksville
Matheson, J. P.	Charlotte
Matheson, R. C.	Madison
Matthews, J. H.	Vass
Matthews, J. M.	Mt. Pleasant
Matthews, J. O.	Clinton
Matthews, M. L.	Cameron
Maxwell, H. B.	Whiteville
Maynard, J. D.	Knott's Island
Meadows, E. B.	Oxford
Meadows, W. J.	Greensboro
Mebane, W. N.	Hillsboro
Meisenheimer, T. F.	Morven
Melvin, W. C.	Duke
Mercer, W. P.	Elm City
Meriwether, F. T.	Asheville
Meroney, B. B.	Murphy
Merrimon, L.	Asheville
Merritt, J. H.	Woodsdale
Michaux, E. R.	Greensboro
Miller, R. B.	Goldsboro
Minor, C. L.	Asheville
Misenheimer, C. A.	Charlotte
Mitchell, J. H.	Ahoskie
Mitchell, P. H.	Ahoskie
Mitchell, W. F.	Shelby
Mock, F. L.	Lexington
Mock, J. H.	Thomasville
Monk, G. M.	Spencer
Monk, H. D.	Trenton
Monk, H. L.	Spencer
Monroe, J. P.	Sanford
Monroe, W. A.	Sanford
Montague, S. S.	Pine Level
Moore, A. W.	Charlotte

Name.	*Address.*
Moore, C. E.	Greensboro
Moore, C. E.	Wilson
Moore, E. G.	Elm City
Moore, F. T.	Benson
Moore, H. T.	Wilmington
Moore, J. C.	Mortimer
Moore, J. L.	Wendell
Moore, K. C.	Wilson
Moore, O.	Charlotte
Moore, T. V.	Acme
Moore, W. H.	Wilmington
Moore, W. J.	Asheboro
Moose, C. D.	Mt. Pleasant
Morehead, E. P.	Weldon
Morphew, M. F.	Marion
Morris, E. C.	Asheville
Morris, E. R.	Asheville
Morris, G. B.	Mt. Olive
Morris, J. A.	Oxford
Morrow, W. C.	Andrews
Morse, L. B.	Hendersonville
Morton, N. D.	Manson
Moser, W. D.	Burlington
Mosley, C. W.	Greensboro
Mudgett, W. C.	Southern Pines
Munroe, J. P.	Charlotte
Munns, L. A.	Smithfield
Murphy, J. G.	Wilmington
Murphy, W. B.	Snow Hill
Myerburg, I. W.	Pine Level
Myers, J. Q.	Charlotte
Naff, G. N.	Garysburg
Nalle, B. C.	Charlotte
Nance, G. B.	Monroe
Neal, J. W.	Monroe
Nelson, R. J.	Robersonville
Nesbitt. C T.	Wilmington
Newborn, J. M.	Jarvisburg
Newell, H. A.	Louisburg
Nichols, A. A.	Sylva
Nichols, A. F.	Roxboro
Nichols, C. G.	Roxboro
Nichols, A. S.	Sylva
Nichols, R. E.	Garman
Nicholson, B. M.	Ringwood
Nicholson Jack	Washington
Nicholson, J. L.	Richlands
Nicholson, P. A.	Washington
Nicholson, S. T.	Washington
Nisbet, W. O.	Charlotte
Nobles, R. J.	Selma
Nobles, J. E.	Greenville
Norman, G. W.	Pomona
Norman, J. S.	Bladenboro
Norment, T. A.	Lumberton
Norris, H.	Rutherfordton
Northington, J. M.	Boardman
Northrop, T. L.	St. Pauls
Oates, G.	Grover
Olive, P. W.	Wade
Olive, W. W.	Durham
Orr, C. C.	Asheville
Orr, N. A.	Belmont
Orr, P. B.	Asheville
Paddison, J. R.	Kernersville
Page, B. W.	Lumberton
Palmer, B. H.	Shelby
Palmer, B. W.	Gulf
Paquin, P.	Asheville
Parker, C. G.	Woodland
Parker, G. E.	Benson
Parker, J. R.	Goldsboro
Parrott, A. D.	Kinston
Parrott, J. M.	Kinston
Parrott, W. T.	Kinston
Pate, C. M.	Raynham
Pate. W. T.	Gibson
Patterson, J. A.	Concord
Patterson, J. F.	New Bern
Patterson, R.	Hoskins
Patrick, L. N.	Gastonia
Payne, R. L.	Monroe
Peck, E. J.	Hot Springs
Peeler, C. N.	Charlotte
Peete, C. H.	Warrenton
Pemberton, W. D.	Concord
Pendleton, A. S.	Raleigh
Penny, J. A. J.	Vanteen
Perkins, D. R.	Marshville
Perkins, F. E.	Henderson
Perry, M. P	Macon
Person, E. C.	Pikeville
Person, J. B.	Selma
Peterson, C. A.	Spruce Pine
Petrie, R. W.	Charlotte
Pfohl, S. F.	Winston
Pharr, T. F.	Concord
Phifer, E. W.	Morganton
Phillips, C. H.	Fullers
Philips, J. J	Tarboro
Phillips, M. D.	Dalton
Pierce, S. B.	Durham
Pittman, R. L.	Fayetteville
Pitts, I. W.	Lenoir
Pollard, W. B.	Winton
Pollok, R.	New Bern
Poole, C. L.	St. Pauls
Pope, H. T.	Lumberton
Potter, W. T.	Aurora
Powell, J. L.	Harrellsville
Powell, R. A.	Fayetteville
Powers, J. B., Jr.	Wake Forest
Powers, J. B., Sr.	Wake Forest
Pressley. G. W.	Charlotte
Primrose, R. S.	New Bern
Prince, D. M.	Laurinburg
Pritchard, A.	Asheville
Pritchard, J. L.	Windsor

Name.	*Address.*
Puett, B. V.	Dallas
Pugh, C. H.	Stanley
Purefoy, G. W.	Asheville
Query, R. A.	Charlotte
Quickel, T. C.	Gastonia
Ramseur, G. A.	China Grove
Rankin, W. S.	Raleigh
Ranson, J. L.	Pineville
Ray, J. B.	Leaksville
Ray, O. L.	Raleigh
Rayby, J. C.	Tarboro
Reaves, W. P.	Greensboro
Reece, J. M.	Elkin
Reed, D. H.	Lucama
Reedy, H.	Rowland
Reeves, A. F.	Asheville
Register, E. C.	Charlotte
Register, F. M.	Tillery
Reid, G. P.	Forest City
Reid, J. W.	Lowell
Reid, R. M.	Gastonia
Reid, W. K.	Charlotte
Reitzel, C. E.	High Point
Reitzel, J. R.	High Point
Reives, J. T.	Greensboro
Reynolds, C. V.	Asheville
Reynolds, T. F.	Canton
Rhem, J. F.	New Bern
Rhodes, J. S.	Williamston
Rhyne, R. E.	Mt. Holly
Rich, J. C.	Candler
Richardson, W. J.	Greensboro
Ricks, L. E.	Fairmont
Riddle, J. B.	Morganton
Ring, J. W.	Elkin
Ringer, P. H.	Asheville
Roberson, C.	Greensboro
Roberson, M.	Durham
Roberts, F.	Marshall
Roberts, H. C.	Coats
Roberson, F.	Durham
Robinson, F.	Lowell
Robinson, M. E.	Goldsboro
Robinson, N.	Elizabethtown
Rodman, J. C.	Washington
Rogers, J. R.	Raleigh
Rogers, W. C.	Franklin
Root, A. S.	Raleigh
Rose, A. H.	Smithfield
Rose, A. S.	Fayetteville
Ross, G. F.	Greensboro
Ross, G. H.	East Durham
Ross, O. B.	Charlotte
Ross, R. D.	Wadesboro
Rosser, R. G.	Broadway
Rowe, B. H.	Bessemer City
Royal, B. F.	Morehead City
Royall, M. A.	Elkin
Royster, H. A.	Raleigh
Royster, S. S.	Shelby
Royster, T. H.	Tarboro
Royster, W. I.	Raleigh
Rozier, R. G.	Rozier
Rucker, A. A.	Rutherfordton
Russell, F. H.	Wilmington
Russell, J.	Canton
Russell, R. E.	Asheville
Russell, S. L.	Yadkinville
Saine, J. W.	Lincolnton
Saliba, M. M.	Wilson
Salley, E. M.	Saluda
Salmon, L. R.	Elkin
Sanderford, F. F.	Creedmoor
Saunders, J. S.	Williamston
Sawyer, C. J.	Windsor
Sawyer, C. W.	Elizabeth City
Sawyer, W. W.	Elizabeth City
Schallert, P. O.	Winston
Schaub, O. P.	Roxboro
Schaubert, L. H.	Asheboro
Schoenwald, J. L.	Wilmington
Schoonover, R. A.	Greensboro
Sevier, D. E.	Asheville
Sevier, T. T.	Asheville
Sexton, C. H.	Dunn
Shaffner, J. F.	Winston-Salem
Shamburger, J. B.	Star
Sharpe, F. L.	Statesville
Shaw, W. G.	Wagram
Shellum, O. W.	Ansonville
Shields, H. B.	Carthage
Shoemaker, H.	Shelby
Shore, C. A.	Raleigh
Shore, T. W.	Boonville
Shull, J. R.	Cliffside
Sigmon, F. G.	Spencer
Sikes, G. L.	Salemburg
Sikes, G. T.	Grissom
Siler, F. L.	Franklin
Simmons, J. O.	Charlotte
Simpson, J. R.	Conetoe
Sink, C. S.	N. Wilkesboro
Skinner, L. C.	Greenville
Sloan, H.	Ingold
Sloan, J. M.	Gastonia
Sloop, F. H.	Crossnore
Smart, J. B.	Forest City
Smith, A. T.	Greensboro
Smith, F.	Duke
Smith, G. W.	Black Creek
Smith, J. B.	Pilot Mountain
Smith, J. McN.	Rowland
Smith, O.	Asheville
Smith, O. S.	Scotland Neck
Smith, R. A.	Goldsboro

Name.	*Address.*
Smith, R. W.	Hertford
Smith, S. A.	Bolton
Smith, W. F.	Chadbourn.
Smith, W. H.	Goldsboro
Smithwick, J. E.	Jamesville
Smoot, J. E.	Concord
Smoot, M. L.	Fayetteville
Snipes, E. P.	Jonesboro
Sorrell, L. P.	Raleigh
Spainhour, E. H.	Winston
Speight, J. W.	Roper
Speight, R. H., Sr.	Whitakers
Spencer, F. B.	Salisbury
Spencer, W. O.	Winston
Spoon, O. O.	Greensboro
Spruill, J. L.	Columbia
Squires, J. W.	Charlotte
Stack, R. E.	Bakersville
Stafford, W. G.	Burlington
Stamps, T.	Lumber Bridge
Stancell, R. H.	Margarettsville
Stanley, J. H.	Four Oaks
Stanton, D. A.	High Point
Staton, L. L.	Tarboro
Steele, W. C.	Mt. Olive
Stevens, J. A.	Clinton
Stevens, M. L.	Asheville
Stevens, R. F.	Raleigh
Stevens, S. A.	Monroe
Stevens, W. F.	Fairmont
Stewart, H. D.	Monroe
Stokes, J. E.	Salisbury
Stone, W. M.	Dobson
Storie, J. G.	Proctor
Street, N. H.	New Bern
Strickland, E. F.	Bethania
Strickland, J. A.	Zebulon
Strickland, W. J.	Moncure
Stringfield, S. L.	Waynesville
Stringfield, T.	Waynesville
Strong, C. M.	Charlotte
Strosnider, C. F.	Mt. Olive
Stroud, A. B.	Ore Hill
Summer, T. W.	Fletcher
Summer, W. J.	Randleman
Summerill, E. L.	China Grove
Summers, C. L.	Winston
Summers, J. W.	Charlotte
Surles, J. B.	Lumber Bridge
Sutton, C. A.	Manteo
Sutton, C. W.	Richlands
Sutton, W. G.	Seven Springs
Swann, J. F.	Semora
Sweaney, J.	Spray
Swett, W. P.	Southern Pines
Swindell, W.	Scranton
Tankersley, Jas. W.	Greensboro
Tate, W. C.	Banner Elk
Tayloe, A. K.	Washington
Tayloe, D. T.	Washington
Taylor, B. C.	Stanley
Taylor, I. M.	Morganton
Taylor, J. T.	Madison
Taylor, T. G.	Leaksville
Taylor, Wm. I.	Kerr
Taylor, Wm. L.	Stovall
Taylor, W. S.	Mt. Airy
Teague, R. J.	Durham
Templeton, J. M.	Cary
Tennent, G. S.	Asheville
Terrell, A. J.	Black Mountain
Terry, J. R.	Lexington
Terry, P. R.	Asheville
Thigpen, Wm. J.	Tarboro
Thomas, G. G. (Hon.)	Wilmington
Thompson, A. F.	Troy
Thompson, C. D.	Lincolnton
Thompson, Cyrus	Jacksonville
Thompson, J. B.	Bostic
Thompson, N. A.	Lumberton
Thompson, S. W.	Neuse
Thompson, W. A.	Rutherfordton
Tilson, J. C.	Marshall
Timberlake, R. E.	Youngsville
Townsend, M. L.	N. Wilkesboro
Tucker, H. McK.	Raleigh
Tucker, J. H.	Charlotte
Tull, Henry	Kinston
Turlington, Wm. T.	Fremont
Turner, H. G.	Raleigh
Turner, J. A.	High Point
Turner, J. M.	N. Wilkesboro
Turner, J. P.	Greensboro
Tuttle, A. F.	Spray
Tuttle, R. G.	Walnut Cove
Trantham, H. L. (Hon.)	Salisbury
Trippe, C. M.	Charlotte
Twitty, J. C.	Rutherfordton
Underhill, H. P.	Wendell
Underwood, O. E.	Earnest
Upchurch, C. G.	Apex
Upchurch, R. G.	Henderson
Utley, H. H.	Benson
Van Poole, C. M.	Salisbury
Vernon, Jas. W.	Morganton
Vestal, Wm. J.	Lexington
Vick, G. D.	Selma
Von Ruck, K. V.	Asheville
Von Ruck, S. H.	Asheville
Wakefield H. A.	Charlotte
Wakefield, W. H.	Charlotte
Walker, C. E.	Charlotte
Walker, H. D.	Elizabeth City
Walker, L. A.	Burlington
Walker, W. E.	Burlington
Wallace, J. W.	Concord
Wallis, W. J.	Brevard
Walters, Chas. M.	Union Ridge
Ward, F. A.	Ryland

Name.	*Address.*
Ward, J. E.	Robersonville
Ward, V. A.	Bethel
Ward, W. H.	Plymouth
Warlick, E. S.	Morganton
Warren, J. W.	Edenton
Warren, R. F.	Prospect Hill
Warren, R. L.	Dunn
Warren, Wm. E.	Williamston
Washburn, B. E.	R. 1, Bostic
Watkins, F. B.	Morganton
Watson, J. B.	Raleigh
Watson, Leon	Broadway
Watson, Walter	New Bern
Watts, R. E.	Oriental
Way, J. H.	Waynesville
Weaver, H. B. (Hon.)	Asheville
Webb, B. G.	Andrews
Webb, L. H.	Chapel Hill
Webb, S. E.	Draper
Wellburn, Wm. R.	Elkin
Wessell, J. C.	Wilmington
West, Robt. M.	Salisbury
West, T. M.	Fayetteville
Wetherspoon, B. J.	Charlotte
Wharton, C. R.	Ruffin
Wharton, Lacy D.	Smithfield
Whisnant, A. M.	Charlotte
Whitaker, A. C.	Julian
Whitaker, R. A.	Kinston
Whitaker, R. B.	Whiteville
White, J. W.	Wilkesboro
Whitehead, Jno. W. (Hon.)	Salisbury
Whitley, A. D. N.	Unionville
Whittington, J. B.	Kinston
Whittington, W. P. (Hon.)	Asheville
Whittington, W. W.	Snow Hill
Whittly, D. P.	Albemarle
Whyms, T. G.	Lasker
Wiggins, J. C.	Winston-Salem
Wilcox, J. W.	Aberdeen
Wilkins, S. A.	Dallas
Williams, A. F.	Wilson
Williams, B. B.	Greensboro
Williams, C. B.	Elizabeth City
Williams, J. A.	Greensboro
Williams, J. D.	Lewisville
Williams, Jas. M.	Warsaw
Williams, Jno. H. (Hon.)	Asheville
Williams, J. W.	Everetts
Williams, T. R.	Venable
Willingham, B. J.	Wilmington
Willis, A. P.	Canton
Wilson, A. R. (Hon.)	Greensboro
Wilson, C. L.	Lenoir
Wilson, F. G.	Gastonia
Wilson, J. E.	Canton
Wilson, R. B.	Newton Grove
Wilson, W. P.	Madison
Winchester, F. M.	Charlotte
Windley, R. E.	Swan Quarter
Windly, C. T.	Belhaven
Wiseman, C. B.	Henrietta
Wishart, W. E.	Charlotte
Witherbee, W. D.	Charlotte
Withers, S. M.	Chadbourn
Woltz, Jno. L.	Mt Airy
Wood, E. J.	Wilmington
Wood, J. W.	R. 3, Shelby
Woodard, Chas. A.	Durham
Woodson, Chas. W.	Salisbury
Woody, S. B.	Spring Creek
Wooten, R. W.	Kinston
Wooten, W. H.	Davidson
Wrenn, Frank	Siler City
Wright, J. B.	Lincolnton
Wright, T. H.	Charlotte
Yarborough, R. F.	Louisburg
Yokley, R. V.	Lexington
York, A. A.	Linwood
York, H. B.	Williamston
Young, R. S.	Concord
Yow, I. A.	Georgeville
Zimmerman, R. U.	Lexington
Zollicoffer, A. R.	Weldon

List of Members for 1913 by Counties

NOTE.—Every physician in the State whose name we could secure has had an opportunity to supply correct information as to his name, postoffice, academic and medical education, date of State license and date the State Society was joined. A few did not take advantage of the opportunity, however. Any one finding an error should report it to the Secretary of the Society so that the report for next year will be correct. SECRETARY.

ALAMANCE COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President	....	....
Secretary	....	....
Anderson, Charles A., Burlington Phys. & Surgs., Balto., 1901.	1893	1896
Faucette, T. S., Burlington Baltimore Med. Coll., 1893.	1893	1896
Freeman, R. A. (Hon.), Burlington Wash. Univ., Balto., 1879.	1879	1904
Goley, W. R., Graham Coll. Phys. & Surgs., Balto., 1885.	1885	1893
Long, Geo. W. (Hon.), Graham Univ. of Penn., 1877.	1877	1877
McPherson, J. W., Haw River Balto. Med. Coll., 1898.	1898	1898
Moser, Wm. D., Burlington N. C. Med. Coll., 1910.	1910	1910
Stafford, W. G., Burlington Bellevue, N. Y., 1871.	1879	1890
Walker, W. E., Burlington Med. Coll. of Va., 1903.	1903	1904
Walker, L. A., Burlington	....	....
Walters, Chas. M., Union Ridge Univ. of Md., 1908.	1908	1908

ANSON COUNTY SOCIETY.

President	....	....
Secretary	....	....
Chapman, Geo. M., Morven Phys. & Surgs., Balto., 1900.	1904	1904
Covington, J. M., Jr., Wadesboro Medico-Chir. Coll., Phila., 1899.	1899	1899
Dunlap, J. M., Ansonville Univ. of N. Y., 1876.	1876	1912
Gunter, J. B., McFarlan Jefferson.	1882	....
Kerr, Jas. E., Lilesville Univ. of Md., 1896.	1897	1897
Misenheimer, T. F., Morven Univ. of N. Y., 1880.	1880	1880
Ross, Robt. D., Wadesboro Univ. of N. Y., 1890.	1890	....
Shellum O. W., Ansonville N. C. Med. Coll., 1909.	1909	....

BEAUFORT COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President, S. T. Nicholson, Washington	1885	1902
Phys. & Surgs., Balto., 1881.		
Secretary, W. T. Potter, Aurora	1901	1910
Med. Coll. Va., Richmond, Va., 1901.		
Blount, J. G., Washington	1892	1892
Bellevue Med., 1892.		
Carter, H. W., Washington	1895	1910
Univ. of Va., 1895.		
Hardy, Ira M., Kinston	1902	1902
Med. Coll. Va., Richmond, Va., 1901.		
Hoyt, A. C., Washington	1900	1910
Univ. of Md., 1900.		
Hunter, H. H., Pinetown	1901	1904
Med. Coll. Va., Richmond, Va., 1901.		
Kellum, W. D., Union	1877	1902
Phys. & Surgs., Balto., 1877.		
Nicholson, Jack, Washington	1904	1900
Univ. of Md., 1904.		
Nicholson, P. A., Washington	1889	1890
Phys. & Surgs., Balto., 1889.		
Rodman, J. C., Washington	1892	1895
Bellevue Med. Coll., 1892.		
Tayloe, D. T., Washington	1885	1885
Bellevue Hosp. Med. Coll., 1885.		
Tayloe, A. K., Washington	1896	1896
Univ. Coll. Med., Richmond, Va., 1897.		
Windley, C. T., Belhaven	1893	1893
Phys. & Surgs., Balto., 1893.		

BERTIE COUNTY SOCIETY.

President	....	....
Secretary, J. L. Pritchard, Windsor	1906	1906
Phys. & Surgs., Balto., 1906.		
Sawyer, C. J., Windsor	1895	1897
Phys. & Surgs., Balto., 1895.		

BLADEN COUNTY SOCIETY.

President	....	....
Secretary	....	....
Clark, G. L., Clarkton	....	1904
Univ. of N. Y., 1876.		
Evans, L. B., Clarkton	1900	1904
Univ. Coll. of Med., 1900.		
Liles, N. P., Elizabethtown	....	....
Norman, J. S., Bladenboro	....	....
Robinson, Newton, Elizabethtown	....	1904
Univ. of Penn., 1869.		

BRUNSWICK COUNTY SOCIETY.

President, E. G. Goodman, Lauvale	1891	1892
Univ. of Md., 1891.		
Secretary, J. A. Dosher, Southport	1903	1903
Balto. Med. Coll., 1903.		
Dickie, H. G., Town Creek	....	....
Coley, Wm. R., Shallotte	1901	....
Univ. Coll. of Med., Richmond, Va., 1901.		
Hughes, Thos. E., Southport	....	....

BUNCOMBE COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President, A. W. Calloway, Asheville Chicago Med. Sch.; Harvard Med. Sch., 1895.	1899	1904
Secretary, G. S. Tennent, Asheville N. C. Med. Coll., 1894.	1894	1894
Adams, J. L., Asheville Jefferson, 1910.	1912	1913
Ambler, C. P., Asheville West. Reser., 1889.	1890	1891
Anderson, J. G., Asheville Univ. of N. C., 1906.	1906	1908
Archer, I. J., Black Mountain Northwestern, 1896.	1905	1906
Ballard, A. M., Asheville Harvard, 1868.	1889	1904
Battle, S. W., Asheville Bellevue, N. Y., 1875.	1887	1887
Briggs, H. H., Asheville Yale, 1897.	1901	1903
Brookshire, H. G., Leicester N. C. Med. Coll., 1905.	1905	1906
Brownson, W. C., Asheville Univ. of N. Y., 1878.	1885	1896
Buckner, J. M., Swannanoa Univ. of N. C., 1908.	1909	1912
Buckner, R. G., Asheville Univ. of Ark., 1897.	1907	1908
Carroll, J. L., Asheville Louisville Med., 1905.	1905	1905
Carroll, Robt. S., Asheville Sines, 1893; Rush., 1897.	1905	1906
Cheesborough, T. P., Asheville Univ. of N. Y., 1891.	1891	1899
Clemenger, F. J., Asheville Univ. of Denver Med. Dept., 1902.	1903	1903
Clontz, W. J., Alexander Vanderbilt, 1888.	1889	1904
Cocke, Joe E., Asheville Louisville Med., 1905.	1905	1905
Cocke, C. H., Asheville Cornell, 1905.	1912	1913
Colby, Chas. DeW., Asheville Med. Dept. Univ. of Mich., 1893; Army Med. Sch., 1905.	1909	1909
Costello, M. J., Asheville Med. Chigo., 1896.	1909	1911
Cotton, C. E., Black Mountain Northwestern, 1889.	1901	1901
Davis, J. C., Candler Atlanta Sch. of Med., 1901.	1909	1911
Dunn, W. L., Asheville Univ. of Mich., 1891.	1900	1900
Eckel, O. F., Asheville Med. Coll. of S. C., 1906.	1907	1908
Elias, L. W., Biltmore Columbia Univ., 1903.	1906	1906
Frazer, T., Asheville Coll. Phys., N. Y., 1901.	1901	1908
Fletcher, M. H. (Hon.), Asheville Bellevue, N. Y., 1881.	1881	1881

Name and Address	*Licensed*	*Joined State Society*
Gardner, G. D., Asheville	1908	1908
Lincoln Memorial, 1908.		
Greene, J. B., Asheville	1910	1911
Univ. of Va., 1893.		
Glenn, E. B., Asheville	1896	1899
Jefferson Med., 1896.		
Gill, J. N., Weaverville	1889	1892
Vanderbilt Univ., 1889.		
Griffith, F. W., Asheville	1911	1912
Johns Hopkins, 1906.		
Harbeck, E. V., Weaverville	1905	1912
N. C. Med. Coll., 1905.		
Harris, I. A. (Hon.), Alexander	1885	1881
Jefferson, Phila.		
Herbert, W. P., Asheville	1910	1911
Univ. of Va., 1907.		
Hunnicutt, W. J., Asheville	1908	1908
Univ. of Tenn., 1895.		
Huston, J. W., Asheville	1912	1913
Rush, Chicago, 1904.		
Jordan, C. S., Asheville	1891	1899
Univ. of N. Y., 1890.		
Lynch, J. M., Asheville	1912	1913
Univ. of Md., 1904.		
McBrayer, L. B., Asheville	1891	1899
Louisville Med., 1889.		
McCracken, C. M., Fairview	1896	1904
N. C. Med. Coll., 1896.		
Merrimon, Louise, Asheville	1899	1904
Woman's Med., 1900.		
Meriwether, F. T., Asheville	1888	1888
Univ. of Louis., 1886.		
Minor, Chas. L., Asheville	1895	1895
Univ. of Va., 1888.		
Morris, E. C., Asheville	1912	1913
Univ. of Ga., 1899.		
Morris, E. R., Asheville	1896	1899
Louisville Med., 1896.		
Orr, Chas. C., Asheville	1904	1907
Univ. of Md., 1904.		
Orr, P. B., Asheville	1901	1904
Jefferson, Phila., 1901.		
Paquin, Paul, Asheville	1899	1899
Univ. of Mo., 1887.		
Pritchard, Arthur, Asheville	1905	1906
Jefferson, Phila., 1905.		
Purefoy, G. W., Asheville	1884	1904
Jefferson, Phila., 1876.		
Reeves, A. F., Asheville	1909	1910
Geo. Washington, 1906.		
Reynolds, C. F., Asheville	1895	1896
Univ. of N. Y., 1895.		
Rich, J. C., Candler	1908	1908
Univ. of Nashville, 1908.		
Ringer, P. H., Asheville	1906	1907
Phys. & Surgs., N. Y., 1904.		
Von Ruck, K., Asheville	1889	1889
Univ. of Tübingen, 1878.		

Name and Address	*Licensed*	*Joined State Society*
Von Ruck, S. H., Asheville	1899	1902
Bellevue, 1899.		
Russell, E. Reid, Asheville	1895	1898
Univ. of Md., 1895.		
Sevier, D. E., Asheville	1895	1899
Jefferson, Phila., 1895.		
Sevier, J. T., Asheville	1895	1899
Jefferson, Phila., 1895.		
Stevens, M. L., Asheville	1892	1893
Balto. Medical, 1891.		
Smith, Owen, Asheville	1905	1905
Jeff. Med., Phila., 1904.		
Terrell, A. J., Black Mountain	1908	1909
Univ. of N. C., 1908.		
Terry, P. R., Asheville	1912	1913
Geo. Washington, 1906.		
Weaver, H. B. (Hon.), Asheville	1881	1881
Washington Univ., 1872.		
Whittington, W. P. (Hon.), Asheville	1882	1882
Phys. & Surgs., Balto., 1882.		
Williams, Jno. H. (Hon.), Asheville	1881	1881
Med. Dept., Iowa S. Univ., 1863.		

BURKE COUNTY SOCIETY.

President. J. B. Riddle, Morganton	1904	1904
Vanderbilt Univ., 1898.		
Secretary. J. W. Vernon, Morganton	1909	1913
Jeff. Med. Coll., 1909.		
Anderson, P. V., Richmond, Va.	1904	1906
Univ. of Va., 1904.		
Gayle, E. M., Morganton	1902	1912
Univ. of Va., 1902.		
Griffin, Wm. Ray, Morganton	1910	1913
Jeff. Med. Coll., 1910.		
Hall, Jas. K., Richmond, Va.	1906	1905
Jeff. Med. Coll., 1904.		
Hennessee, E. A., Morganton	1902	1903
Chattanooga Med. Coll., 1900.		
Houck, Albert, Morganton	1891	1892
Phys. & Surgs., Balto., Md., 1884.		
McCampbell, John, Morganton	1895	1903
Balto. Med. Coll., 1894.		
Phifer, E. W., Morganton	1902	1903
N. C. Med. Coll., 1902.		
Taylor, Isaac M., Morganton	1883	1903
Phys. & Surgs., N. Y., 1882.		
Warlick, E. S., Morganton	1881	1903
Vanderbilt, 1881.		
Watkins, F. B., Morganton	1907	1910
Jeff. Med. Coll., 1907.		

CABARRUS COUNTY SOCIETY.

President, *Robt. S. Young, (Hon.), Concord	1882	1882
Univ. of N. Y., 1881.		
Secretary, R. M. King, Concord	1903	1905
Jeff. Med., 1903.		
*Archey, L. M. (Hon.), Concord	....	....

*Deceased.

Name and Address	*Licensed*	*Joined State Society*
Black, Jas. C., Harrisburg	1886	1891
Univ. of Md., 1886.		
Burleyson, L. N., Concord	1891	1894
Univ. of Md., 1891.		
Caldwell, D. G., Concord	1885	1885
Univ. of Md., 1885.		
Caudle, H. H., Kannapolis	1907	1910
Gouger, George J., Concord	....	....
N. C. Med., 1907.		
Foil, M. A., Mt. Pleasant	1891	1908
Jeff. Med. Coll., 1891.		
Grier, S. A., Harrisburg	....	1904
Jeff. Med. Coll., 1879.		
Granger, Geo. J., Concord	1891	1899
Univ. of Md., 1891.		
Lafferty, J. S., Concord	1881	1890
Univ. of Md., 1881.		
McFayden, P. R., Concord	1901	1904
Med. Coll. of Va., 1901.		
Matthews, J. M., Mt. Pleasant	....	....
Moose, G. D., Mt. Pleasant	1909	1910
Univ. of Md., 1907.		
Patterson, Jno. A., Concord	....	....
Pemberton, W. D., Concord	1887	1887
Univ. of Md., 1887.		
Pharr, Theo. F. (Hon.), Concord	....	....
Bellevue, 1875.		
Smoot, J. E., Concord	1894	1902
Balto. Med. Coll., 1893.		
Wallace, J. W., Concord	1907	1908
N. C. Med., 1907.		
Yow, I. A., Georgeville	1907	1910
N. C. Med., 1906.		

CALDWELL COUNTY SOCIETY.

President, A. B. Goodman, Lenoir	1897	1904
N. C. Med., 1898.		
Secretary, C. Banks McNairy, Lenoir	1893	1907
Coll. Phys. & Surgs., Balto., 1893.		
Carter, Geo. H., Kings Creek	....	1904
Univ. of N. Y., 1877.		
Coffey, L. H., Lenoir	1906	1906
Med. Coll. of Va., 1906.		
Corpening, O. S., Granite Falls	1906	1906
Univ. of Med., Va.		
Flowers, B. G., Granite Falls	1884	1904
Hickman, Mark, Hudson	1909	....
Univ. Med. Coll., Richmond, 1909.		
Kent, A. A., Lenoir	1885	1894
Jeff. Med. Coll., 1885.		
Moore, J. C., Mortimer	1907	1908
Richmond, Va., 1907.		
Pitts, I. W., Lenoir	1901	1911
Med. Univ., South, 1902.		
Storie, J. G., Proctor	....	....
Wilson, C. L., Lenoir	1903	1905
U. S. Grant Univ., 1903.		

CARTERET COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President, C. L. Duncan, Beaufort	1902	1904
Univ. of Md., 1902.		
Secretary, W. E. Headen, Morehead City	1890	1891
Univ. of Md., 1891.		
Ball, M. W., Newport	....	....
Bonner, K. P. B., Morehead City	1905	1905
Med. Coll. of Va., 1905.		
George, D. S., Marshallburg	1903	1903
N. C. Med. Coll., 1903.		
Royal, B. F., Morehead City	1909	....
Jefferson, 1909.		

CASWELL COUNTY SOCIETY.

President.	....	....
Secretary.	....	....
Malloy, S. A., Yanceyville	1898	1903
Ky. Sch. Med., 1897.		

CHATHAM COUNTY SOCIETY.

President.	....	...
Secretary.	....	....
Chapin, H. T., Pittsboro	1886	1886
Louis. Med. Coll., 1886.		
Denson, H. A., Bennett	1887	1887
Coll. Phys. & Surgs., Indianapolis, Ind., 1887.		
Edwards, J. D., Siler City	....	1894
Louis. Med. Coll., 1887.		
Farthing, L. E., Pittsboro	....	....
Fields, Robt. M., Goldston	....	....
Hackney, B. H., Bynum	1911	1912
Tulane Univ., 1911.		
Laster, P. D., Lockville	1885	1890
Louis. Med. Coll., 1875.		
Mann, A. W., Bynum	....	....
McManus, W. L., Bonlee	....	....
Palmer, R. W., Gulf	1891	1891
Louis. Med. Coll., 1890.		
Strickland, W. J., Moncure	....	....
Stroud, A. D., Ore Hill	1894	1892
Phys. & Surgs., Balto., Md., 1876-1877.		
Upchurch, C. G., Apex	....	....
Wrenn, Frank, Siler City	....	....

CHEROKEE COUNTY SOCIETY.

President, N. B. Adams, Murphy	1909	1909
Tenn. Med. Coll., 1896.		
Secretary, W. C. Morrow, Andrews	1909	1909
Atlanta Sch. of Med., 1907.		
Heighway, S. C., Murphy	1898	1898
Med. Coll., Ohio, 1885.		
Herbert, F. L., Andrews	1912	1912
Tenn. Med., Knoxville, 1904.		
Hill, J. N., Murphy	1909	1909
Univ. of Louisville, 1909.		

Name and Address	*Licensed*	*Joined State Society*
McKaig, T. F., Andrews	1906	1906
Alabama Med., 1890.		
Meroney, B. B., Murphy	1908	1908
Webb, B. G., Andrews	1885	1885
Louis. Med. Coll., 1885.		

CHOWAN-PERQUIMANS COUNTY SOCIETY.

President, J. H. McMullan, Edenton	1876	1876
Univ. of Md., 1876.		
Secretary, H. M. S. Cason, Edenton	1899	1899
Univ. of Md., 1899.		
Cox, T. A., Hertford	1907	1907
Univ. of Md., 1892.		
Dillard, Richard (Hon.), Edenton	....	....
Hathaway, B. W., Winfall	1885	1910
Louis. Med. Coll., 1885.		
Smith, R. W., Hertford	1895	1911
Univ. of Md., 1895.		
Ward, F. A., Ryland	1899	1913
Med. Coll. Va., 1899.		
Warren, J. W., Edenton	1907	1910
Univ. Coll. of Med., Va.		

CLEVELAND COUNTY SOCIETY.

President, T. G. Hamrick, Shelby	1895	1904
Phys. & Surgs., Balto., 1895.		
Secretary, W. F. Mitchell, Shelby	1900	1904
Univ. of Md., 1890.		
Aydlett, J. P., Earl	1903	1903
Univ. of Ky., 1901.		
Champion, C. O., Mooresboro	1902	1898
Atlanta Med. Coll., 1887.		
Grigg, W. T., Lawndale	1904	1904
Atlanta Med., 1891.		
Houser, E. A., Fallston	1902	1904
Balto. Univ., 1912.		
Hunt, Jno. F., Casar	1900	1913
Univ. of Tenn., 1900.		
Lattimore, E. B., Shelby	1896	1903
Bellevue Hospital Med., 1897.		
Lee, L. V., Lattimore	1897	1904
Atlanta Med., 1894.		
McBrayer, T. E., Shelby, R. 1	....	1904
Wash. Univ., 1875.		
Oates, Geo., Grover	1896	1904
Univ. of Louisville, 1894.		
Palmer, B. H., Shelby	1898	1904
Louis. Med. Coll., 1896.		
Royster, S. S., Shelby	1896	....
Tennessee, 1890.		
Shoemaker, Harlan, Shelby	....	1910
Univ. of Penn., 1902.		
Wood, J. W., Shelby, R. 3	1903	1904

COLUMBUS COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President, J. M. Northington, Boardman	1905	1910
Med. Coll. of Va., 1905.		
Secretary, H. B. Maxwell, Whiteville	1902	1902
Univ. Med., 1902.		
Baggett, Lehman, Tabor	1907	1907
N. C. Med. Coll., 1907.		
Crowell, W. H., Whiteville	1895	1896
Univ. of Md.		
Floyd, A. G., Fair Bluff	1885	1904
Univ. of Md., 1885.		
Floyd, L. D., Cerro Gordo	1911	1911
N. C. Med. Coll., 1911.		
Floyd, J. W., Tabor	1907	1912
Moore, T. V., Acme	1901	1901
Baltimore, 1901.		
Smith, S. A., Bolton	1911	1911
N. C. Med. Coll., 1911.		
Smith, W. P., Chadbourn	1904	1904
N. C. Med. Coll., 1904.		
Whitaker, R. B., Whiteville	1912	1912
Univ. Coll. of Med.		
Withers, S. M., Chadbourn	1902	1902
N. C. Med. Coll., 1902.		

CRAVEN COUNTY SOCIETY.

President, R. N. Duffy, New Bern	1907	1907
Johns Hopkins, 1906.		
Secretary, Raymond Pollok, New Bern	1900	1900
Jefferson, 1899.		
Barker, C. S., Trenton	....	....
Bonner, Montague, New Bern	....	....
Caton, G. A., New Bern	1898	1904
Med. Coll. of Va., 1898.		
Duffy, Leinster, New Bern	1888	1888
Phys. & Surgs., Balto., 1881.		
Duffy, Francis (Hon.), New Bern	1872	1872
Univ. of Va., 1872.		
Duffy, Chas. (Hon.), New Bern	....	....
Duguid, Jas. A., Vanceboro	1906	....
N. C. Med. Coll., 1905.		
Gibbs, N. M., New Bern	1895	1895
Univ. of Md., 1896.		
Hawes, S. J., Dover	....	....
Hughes, Geo., Polloksville	....	....
Jones, R. D. V., New Bern	1897	1897
Univ. of Md., 1896.		
Patterson, J. F., New Bern	1906	1906
Jefferson, 1906.		
Primrose, R. S., New Bern	1890	1896
Bellevue, 1889.		
Rhem, J. F., New Bern	1893	1893
Bellevue, 1894.		
Street, N. H., New Bern	1884	1884
Univ. of N. Y., 1881.		
Watson, Walter, New Bern	....	....

CUMBERLAND-HOKE COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President, Jas. M. Lilly, Fayetteville Univ. Coll. of Med., 1903.	1903	1904
Secretary, R. L. Pittman, Fayetteville Jeff. Med. Coll., 1910.	1910	1912
Averitt, K. G., Cedar Creek Balto. Med. Coll., 1893.	1893	1902
Brown, G. W., Raeford Ky. Sch. of Med., 1898.	1900	1904
Cochran, J. S., Fayetteville Univ. of Med., Va., 1912.	1912	1913
Dickson, A. P., Raeford Univ. of N. Y., 1878.	....	1906
Graham, Geo. A., Raeford Univ. of N. Y., 1876.	....	1905
Hays, R. B., Fayetteville Univ. of Md., 1906.	1910	1910
Highsmith, Seavy, Fayetteville Univ. Coll. of Med., 1901.	1901	1901
Highsmith, J. F., Fayetteville Jeff. Med. Coll., 1889.	1889	1893
Hutchinson, S. C., Hope Mills N. C. Med. Coll., 1911.	1911	1912
Jordan, Wm. S., Fayetteville Univ. of N. C. Med., 1906.	1906	1906
Juat, Francis, Raeford Univ. of Berne, 1886.	1910	1910
McGougan, J. V., Fayetteville Univ. of Md., 1893.	1893	1904
McGougan, B. M., Rockfish Univ. of Md., 1912.	1912	1913
McKethan, J. A., Fayetteville N. C. Med. Coll., 1901.	1901	1901
McKethan, D. G., Fayetteville Univ. Coll. Med., 1899.	1899	1899
McNeill, J. W. (Hon.), Fayetteville Bellevue Hospital, N. Y., 1876.	1876	1876
Olive, P. W., Wade Phys. & Surgs., Balto., 1907.	1907	1908
Powell, R. A., Fayetteville Univ. Coll. of Med., 1907.	1907	1908
Rose, A. S., Fayetteville Univ. Coll. of Med., 1901.	1901	1904
Smoot, M. L., Fayetteville Univ. Coll. of Med., Va., 1901.	1901	1904
West, T. M., Fayetteville Univ. of Md., 1908.	1910	1910

CURRITUCK COUNTY SOCIETY.

President,	....	....
Secretary,	....	....
Garrenton, Cecil, Coinjock Med. Coll. of Va., 1908.	1908	1910
Griggs, W. T., Poplar Branch Univ. of Va., 1896.	1896	1901
Maynard, J. D., Knotts Island Univ. of N. C., 1908.	1908	1908
Newbern, J. M., Jarvisburg	....	....

DAVIDSON COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President, D. J. Hill, Lexington	1893	1894
Coll. Phys. & Surgs., Balto., 1893.		
Secretary, J. R. Terry, Lexington	1912	1912
Univ. of Tenn., 1911.		
Anderson, A., Denton	....	....
Buchanan, E. J., Lexington	1892	1900
Univ. of Md., 1892.		
Clodfelter, C. M., Lexington	1905	1905
Phys. & Surgs., Balto., 1905.		
Hill, W. L., Lexington, R. 4	....	....
Long, E. F., Denton	1909	1909
Med. Coll. of Va., 1909.		
Mock, J. H., Thomasville	1898	1904
Med. Coll. of Va., 1898.		
Mock, F. L., Lexington, R. 3	1908	1908
N. C. Med. Coll., 1898.		
Vestal, Wm. J., Lexington	1885	1893
Phys. & Surgs., Balto., Md., 1883.		
York, A. A., Linwood, R. 2	1907	1907
Chatt. Med. Coll., 1907.		
Yokley, R. V., Lexington	....	....
Tenn., 1907.		
Zimmerman, R. U., Lexington	1901	1904
N. C. Med. Coll., 1901.		

DUPLIN COUNTY SOCIETY.

President, Jno. M. Faison, Faison	1885	1885
Univ. of Va., 1885.		
Secretary, B. R. Graham, Wallace	1895	1899
Univ. of Va., 1895.		
Carr, R. L., Rose Hill	1908	1908
Balto. Med Coll., 1907.		
Carroll, J. W., Wallace	1903	1903
Univ. of Md., 1903.		
Crocker, Wm. D., Warsaw	1896	1896
Louisv. Med., 1897.		
Kennedy, G. W., Beulaville	....	....
Lane, Jno. L., Faison	1906	1906
N. C. Med. Coll, 1906.		
Landen, J. F., Chinquapin	1905	1907
Univ. Coll. of Med., 1905.		
Williams, J. M., Warsaw	1902	1902
Univ. of Md., 1902.		

DURHAM COUNTY SOCIETY.

President, W. N. Hicks, Durham	1885	1885
Med. Coll. of Va., 1864.		
Secretary, Foy Roberson, Durham	1909	1912
Jeff. Med. Coll., 1909.		
Adams, C. A., Durham	1892	1892
Coll. of Phys. & Surgs., Balto., 1892.		
Bitting, N. D., Durham	1907	1908
Jefferson, 1907.		

Name and Address	*Licensed*	*Joined State Society*
Boddie, N. P., Durham	1883	1883
Phys. & Surgs. Coll., 1883.		
Booker, L. S., Durham	1910	1910
Univ. Coll. of Med., Richmond, 1908.		
Boone, W. H., Durham	1902	1902
N. C. Med. Coll., 1902.		
Bowling, E. H., Durham	1890	1906
Phys. & Surgs., Balto., 1891.		
Boyles, A. C., Durham	1887	1887
Univ. of Md., 1887.		
Brooks, B. U., Durham	1905	1905
Univ. of Md., 1905.		
Cheatham, Arch, Durham	1888	1888
Univ. of Md., 1888.		
Conier, N. L., Durham	1911	1912
Univ. of Md., 1884.		
Fassett, B. W., Durham	1899	1903
Balto. Med. Coll., 1898.		
Felts, Robt. L., Durham	1899	1907
Univ. of Md., 1898.		
Graham, Joseph, Durham	1901	1901
Univ. of Penn., 1901.		
Hicks, Calvin, Durham	1904	1904
Univ. of Md., 1904.		
Hill, C. D., Durham	1912	1912
Univ. of Va., 1888.		
Holloway, R. L., West Durham	1893	1893
Med. Coll. of Va., 1893.		
Johnson, N. M. (Hon.), Durham	1879	1879
Phys. & Surgs., Balto., 1877.		
Jordan, A. C., Durham	1885	1904
Phys. & Surgs., Balto., 1881.		
Kernes, T. C., Durham	1911	1912
Univ. of Penn., 1911.		
King, M. N., Durham	1910	1910
Univ. of Md., 1898.		
Lyon, E. H., Bahama	1904	1911
Univ. of Md., 1904.		
Manning, J. M., Durham	1885	1885
Bellevue H. M. C., 1882.		
McPherson, S. D., Durham	1903	1903
Univ. of Md., 1903.		
Nichols, R. E., Garman	1890	1904
Va. Med., Richmond, Va., 1890.		
Olive, W. W., Durham	1907	1908
Univ. of Md., 1906.		
Pierce, S. B., Durham	1897	1897
Bellevue H. Med. C., 1897.		
Roberson, M., Durham	1912	1912
Va. Med. Coll., 1912.		
Ross, G. H., East Durham	1899	1899
Univ. of Tenn., 1899.		
Teague, R. J., Durham	1890	1890
Univ. of Md., 1890.		
Woodard, Chas. A., Durham	1904	1907
Univ. of Va., 1904.		

EDGECOMBE COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President, J. C. Philips, Tarboro	1905	1905
Phys. & Surgs., N. Y., 1894.		
Secretary, S. N. Harrell, Tarboro	1897	1897
Univ. of Md., 1897.		
Baker, J. M. (Hon.), Tarboro	1879	1879
Univ. of Md., 1879.		
Bass, S. P., Tarboro	1907	1908
Univ. of Va., 1906.		
Green, Wm. W., Tarboro	1908	1908
Univ. of N. C., 1908.		
Mercer, W. P., Elm City	1879	1904
Univ. of N. Y., 1879.		
Rayby, J. C., Tarboro, R. F. D.	....	....
Simpson, J. R., Conetoe	....	....
Speight, R. H., Sr. (Hon.), Whitakers, R. 1	1875	1875
Univ. of Md., 1870.		
Staton, L. L., Tarboro	1870	1900
Univ. of N. Y., 1870.		
Thigpen, Wm. J., Tarboro	1900	1900
Jeff. Med., 1900.		

FORSYTH COUNTY SOCIETY.

President, C. S. Lawrence, Winston-Salem	1908	1908
Geo. Wash. Univ., 1908.		
Secretary, J. C. Wiggins, Winston-Salem	1911	1911
Univ. of Penn., 1911.		
Bahnson, H. T. (Hon.), Winston-Salem	....	....
Bynum, W. H., Germanton	1900	1900
Univ. Coll. of Med., 1900.		
Bynum, Jno., Winston-Salem	1900	1900
Univ. Coll. of Med., Va., 1900.		
Carlton, R. L., Kernersville	1906	1906
Univ. of Md., 1906.		
Chaney, T. M., Winston	....	....
Craig, S. D., Winston-Salem	1908	1911
Tulane Univ., 1908.		
Dalton, D. N., Winston	1885	1886
Univ. of N. Y., 1881.		
Davis, A. P., Winston	1896	1904
Ky. Med. Sch., Geo. Wash. Univ., 1894-1906.		
Davis, T. W., Winston-Salem	1900	1901
Med. Coll. of S. C., 1898.		
Fearington, J. P., Winston	1887	1904
Univ. of Md., 1887.		
Flint, S. S., Rural Hall	1890	1906
Phys. & Surgs., Balto., 1889.		
Gray, E. P., Winston-Salem	1907	1907
Johns Hopkins Univ., 1906.		
Hammock, J. C., Walkertown	1895	1905
Coll. Phys. & Surgs., Balto., 1895.		
Jewett, R. D., Winston	1890	1890
Univ. of Va., 1888.		
Johnson, W. M., Winston-Salem	1908	1910
Jeff. Med. Coll., 1908.		
Kapp, H. H., Winston	1901	1904
Jeff. Med. Coll., 1901.		

Name and Address	*Licensed*	*Joined State Society*
Linville, W. C., Winston-Salem	1903	1903
Univ. of Md., 1903.		
Linville, A. Y., Winston-Salem	1889	1889
Univ. of N. Y., 1889.		
Lockett, E. A., Winston-Salem	1903	1903
Univ. of Penn., 1902.		
Long, Vann McK., Winston	1906	1906
N. C. Med. Coll., 1906.		
Lott, H. S., Winston-Salem	1887	1887
Univ. of Ga., 1884.		
Paddison, Jno. R., Kernersville	....	....
Pfohl, S. F., Winston-Salem	1898	1898
Univ. of Penn., 1894.		
Schallert, P. O., Winston-Salem	1904	1904
Med. Dept. Univ. of Ill., 1904.		
Shaffner, T. F., Sr. (Hon.), Winston-Salem	....	....
Spainhour, E. H., Winston	1898	1898
Balto. Med. Coll., 1898.		
Spencer, W. O., Winston	1891	1894
Jeff. Med. Coll., 1891.		
Strickland, E. F., Bethania	1887	1903
Univ. of N. Y., 1887.		
Summers, C. L., Winston	1891	1896
Univ. of Md., 1887.		
Whittington, J. B., Winston	....	....
Williams, J. D., Lewisville	1898	1898
Vanderbilt, 1898.		

FRANKLIN COUNTY SOCIETY.

President, R. F. Yarborough, Louisburg	1899	1899
Columbia Univ., D. C., 1898.		
Secretary, H. A. Newell, Louisburg	1906	1906
Phys. & Surgs., Balto., 1906.		
Bobbitt, E. H., Louisburg	....	1886
Univ. of Md., 1877.		
Burt, S. P., Louisburg	1896	1904
Phys. & Surgs., Balto., 1896.		
Floyd, R. P., Louisburg	....	1904
S. C. Med. Coll., 1878.		
Henderson, R. B., Franklinton	1887	1904
Univ. of Md., 1887.		
Harris, J. H., Franklinton	....	....
Johnson, B. C., Bunn	1910	1910
Univ. of N. C., 1909.		
Malone, J. E., Louisburg	....	1904
Bellevue, 1875.		
Timberlake, R. E., Younsville	1908	1910
Jeff. Med. Coll., 1908.		

GASTON COUNTY SOCIETY.

President, R. E. Rhyne, Mt. Holly	1907	1908
N. C. Med. Coll., 1907.		
Secretary, T. C. Quickel, Gastonia	1899	1904
Tulane Univ., 1900.		
Adams, C. E., Gastonia	1885	1904
Univ. of Md., 1878.		

Name and Address	*Licensed*	*Joined State Society*
Anders, M. G., Gastonia	1902	1902
Med. Coll. of Md., 1901.		
Anderson, Jas. A., McAdenville	1909	1909
Univ. of Ga., 1899.		
Anthony, J. E., Kings Mountain	1911	1911
Davis, Wm. W., Belmont	....	1908
Ky. School of Med., 1875.		
Eddleman, H. M., Gastonia	1886	1904
Ky. School of Med., 1886.		
Falls, O. G., Kings Mountain	....	....
Garren, R. H., Bessemer	1901	1904
Univ. of Nash., 1900.		
Garrison, D. A., Gastonia	1896	1899
Louis. Med. Coll., 1896.		
Glenn, H. F., Gastonia	1900	1904
Phys. & Surgs., Atlanta, 1900.		
Glenn, L. N., Gastonia	1897	1897
Univ. of Md., 1897.		
Hood, J. S., Kings Mountain	1907	1910
Jeff. Med. Coll., 1907.		
Hunter, M. C., Huntersville	1882	1904
Phys. & Surgs., Balto, 1882.		
Jenkins, Jno. H., Gastonia	1888	1888
Ky. School of Med., 1887.		
Orr, N. A., Belmont	....	....
McCombs, C. J., Gastonia	1905	1908
N. C. Med. Coll., 1905.		
McCoy, Thos. M., Mt. Holly	1906	1907
N. C. Med. Coll., 1905.		
Patrick, L. N., Gastonia	1910	1903
Univ. of Md., 1910.		
Puett, B. V., Dallas	1909	1910
Woman's Med. Coll., 1909.		
Pugh, C. H., Stanley	....	....
Reid, J. W., Lowell	1909	1909
Jeff. Med. Coll., 1909.		
Reid, Robt. M., Gastonia	1890	1903
Univ. of N. Y., 1890.		
Robinson, F., Lowell	1878	1904
Louis. Med. Coll., 1878.		
Rowe, R. H., Bessemer City	1912	1913
Univ. of Louisv., 1912.		
Royster, T. H., Tarboro	1910	1910
Med. Coll. of Va., 1909.		
Sloan, J. M., Gastonia	1891	1904
Louisv. Med. Coll., 1891.		
Wilkins, S. A., Dallas	1903	1903
Univ. of Ky., 1902.		
Wilson, F. G., Gastonia	1896	1899
Univ. of Md., 1896.		

GRANVILLE COUNTY SOCIETY.

President, T. L. Booth, Oxford	....	....
Med. Coll. of S. C., 1883.		
Secretary, G. T. Sikes, Grissom	1884	1884
Univ. of Md., 1883.		
Bullock, W. B., Hester	1892	....
Bellevue, 1892.		

Name and Address	*Licensed*	*Joined State Society*
Coggeshall, G. A., Oxford	1879	1894
Bellevue Med. Coll., 1879.		
Daniel, N. C., Oxford	1895	....
N. C. Med. Coll., 1895.		
Hardee, P. R., Stem	1885	1885
Phys. & Surgs., Balto., 1885.		
Hays, Benj. K., Oxford	1894	1896
Univ. Coll. of Med., Va., 1874.		
Holloway, Oscar W., North Side	1901	1903
Med. Coll. of Va., 1901.		
Meadows, E. J., Oxford	1901	1901
Univ. Coll. of Med., Va., 1901.		
Morris, Jos. A., Oxford	1893	1893
Vanderbilt Univ., 1890.		
Sanderford, J. F., Creedmoor	1890	1891
Phys. & Surgs., Balto., 1890.		
Taylor, Wm. L., Stovall	1901	1900
Univ. of Va., 1900.		

GREENE COUNTY SOCIETY.

President, W. W. Whittington, Snow Hill	1895	1898
Louisv. Med. Coll., 1895.		
Secretary, J. M. Harper, Hookerton	1910	1910
Univ. of N. C.		
Edwards, G. C., Hookerton	1883	1883
Bellevue, N. Y., 1883.		
Harper, J. H., Snow Hill	1906	1906
Jeff. Med. Coll., 1906.		
Murphy, W. B., Snow Hill	1903	1903
Univ. Coll. Med., Richmond, 1903.		

GUILFORD COUNTY SOCIETY.

President. Wm. J. McAnally, High Point	1896	....
Balto. Med. Coll., 1897.		
Secretary, Parran Jarboe, Greensboro	1906	1906
Georgetown Univ., 1905.		
Alford, A. E. B., Greensboro	1909	1909
Columbia Univ. of N. Y., 1909.		
Ashworth, W. C., Greensboro	1892	1892
Coll. Phys. & Surgs., Balto., 1892.		
Austin, J. W., High Point	....	....
Banner, C. W., Greensboro	1899	1901
Univ. of Med., 1899.		
Battle, J. T. J., Greensboro	1884	1889
Phys. & Surgs., Balto., 1884.		
Beall, L. G., Greensboro	1906	1906
N. C. Med. Coll., 1906.		
Beall, W. P. (Hon.), Greensboro	1879	1879
Jefferson, Phila., 1879.		
Bowman, H. P., Greensboro	1894	....
Univ. of Tenn., 1894.		
Boyles, J. H., Greensboro	1903	1903
Coll. of Phys. & Surgs., Balto., 1903.		
Braddy, W. H., Greensboro	1909	1913
Univ. of N. C., 1909.		
Burrus, Jno. T., High Point	1898	1898
Balto. Med., 1901.		

Name and Address	*Licensed*	*Joined State Society*
Coe, S. C., High Point	1912	1913
N. C. Med. Coll., 1910.		
Cole, W. F., Greensboro	1909	1909
Johns Hopkins, 1909.		
Dees, R. E., Greensboro	1908	1908
Univ. of Md., 1906.		
Dees, R. O., Greensboro	1906	1907
Univ. of Md., 1906.		
Dick, J. V., Gibsonville	1907	1908
Univ. of N. C., 1907.		
Dodson, H. H., Greensboro	1885	1886
Med. Coll. of Va., 1882.		
Duncan, G. F., Greensboro	1898	1907
Balto. Univ., 1898.		
Edwards, V. E., Stokesdale	....	....
Fortune, A. F., Greensboro	1900	1904
Univ. Coll. of Med., Va., 1900.		
Fox, M. F., Guilford College	1885	1885
Phys. & Surgs., 1881.		
Gilmer, C. S., Greensboro, R. 6	1891	1894
Univ. of N. Y., 1891.		
Gove, Anna M., Greensboro	N. Y., 1892	1894
W. M. C., N. Y., 1892.	N. C., 1894	
Grayson, Chas. S., High Point	1907	1908
Geo. Washington Univ., 1906.		
Harrison, E., Greensboro	1900	1900
Univ. of Md., 1896.		
Hilton, J. J., Greensboro	1889	1904
Univ. of Md., 1886.		
Holt, Wm. T., McLeansville	1890	1890
Univ. of Tenn., 1890.		
Hyatt, F. C., Greensboro	1907	1907
Jefferson, 1907.		
Jackson, W. L., Trinity	1912	1913
N. C. Med. Coll., 1912.		
Jones, Wm. M., Greensboro	1903	1903
Univ. of Md., 1903.		
Jordan, G. E., Gibsonville	1891	1904
Phys. & Surgs., Balto., 1891.		
Knight, W. P., Greensboro	1898	1898
Balto. Med. Coll., 1898.		
Long, J. W., Greensboro	1884	....
Vanderbilt Univ., 1884.		
McCain, H. W., High Point	1909	1911
Univ. of Md., 1909.		
Meadows, W. J., Greensboro	1899	1904
Med. Coll. of Ala., 1894.		
Michaux, E. R., Greensboro	1889	1904
Univ. of N. Y., 1889.		
Moore, Chas. E., Greensboro	1909	....
Jeff. Med. Coll., 1907.		
Moseley, C. W., Greensboro	1893	1896
Balto. Med., 1893.		
Norman, Geo. W., Pomona	1896	1896
Balto., Md., 1896.		
Reaves, W. P., Greensboro	1905	....
Univ. of South, 1903.		
Reitzel, C. E., High Point	1902	1902
Phys. & Surgs., Atlanta, Ga., 1902.		

Name and Address	*Licensed*	*Joined State Society*
Reitzel, J. R., High Point	1895	....
Univ. of Tenn., 1892.		
Reives, J. T., Greensboro	1891	1892
Louisv. Med. Coll., 1891.		
Richardson, W. J., Greensboro	1889	1904
Jeff. Med. Coll., 1869.		
Roberson, Chas., Greensboro	1897	....
L. I. College Hospital, 1897.		
Ross G. F., Greensboro	1908	....
Univ. of Penn., 1907.		
Schoonover, R. A., Greensboro	1906	1912
Univ. of Md., 1905.		
Smith, A. T., Greensboro	1910	1913
Med. Coll. of Va., 1905.		
Spoon, O. A., Greensboro	1908	....
N. C. Med. Coll., 1908.		
Stanton, D. A., High Point	1887	1894
Vanderbilt Univ., 1887.		
Tankersley, Jas. W., Greensboro	1906	1906
Jefferson, 1906.		
Tomlinson, J. M., Archdale	....	....
Jefferson.		
Turner, J. P., Greensboro	1897	1904
Univ. of Md., 1896.		
Turner, J. A., High Point	1889	1891
Louisv. Med. Coll., 1886.		
Whitaker, A. C., Julian	1903	....
Univ. of Tenn., 1903.		
Williams, J. A., Greensboro	1898	1898
Univ. of Va., 1898.		
Williams, B. B., Greensboro	1886	....
Univ. of Md., 1883.		
Wilson, A. R. (Hon.), Greensboro	....	....

HALIFAX COUNTY SOCIETY.

President, Jno. A. Collins, Enfield	....	....
Bellevue.		
Secretary, A. S. Harrison, Enfield	1888	1898
Univ. of Md., 1888.		
Adkins, E. H., Rosemary	1907	....
Univ. of Md., 1905.		
Ferguson, H. B., Halifax	1882	....
Jefferson Med. Coll.		
Hammer, C. I., Roanoke Rapids	1907	....
Univ. of Md., 1905.		
Leggett, K., Hobgood	1885	1885
Ky. School of Med., 1884.		
Long, T. W., Roanoke Rapids	1909	....
Univ. Coll. of Med., Richmond, Va., 1908.		
Nicholson, B. M., Ringwood	1910	1913
Univ. Coll. of Med., Richmond, Va., 1910.		
Register, F. M., Tillery	1891	1904
Ky. School of Med., 1893.		
Smith, O. S., Scotland Neck	1899	1899
Zollicoffer, A. R., Welson	....	....

HARNETT COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President. H. H. Utley, Benson	1906	1906
Balto. Med., 1906.		
Secretary, J. W. Halford, Lillington	1905	1905
Columbian, 1904.		
Arnold, L. J., Lillington	1905	1905
N. C. Med. Coll., 1905.		
Barefoot, M. L., Dunn	1911	1912
Univ. of Md., 1911.		
Hicks, I. F., Dunn	1902	1902
N. C. Med. Coll., 1902.		
Highsmith, Chas., Dunn	1898	1898
Balto. Med., 1898.		
Holt, W. P., Duke	1895	1901
Jefferson, 1895.		
Hudson, W. L., Dunn	1883	1894
Ky. School of Med., 1876.		
Lee, S. P. J., Dunn	1904	1905
Md. Med. Coll., 1904.		
McKay, J. F., Buie's Creek	1885	1904
S. C. Med. Coll., 1884.		
McLean, J. W., Godwin	1902	1902
N. C. Med. Coll., 1902.		
Melvin, W. C., Duke, R. 2	1900	1905
Univ. Coll. of Med., Va., 1900.		
Moore, F. T., Benson	....	1904
Phys. & Surgs., Balto., 1885.		
Roberts, H. C., Coats	1912	1913
Tulane Univ., 1912.		
Sexton, C. H., Dunn	1890	1904
Univ. of Md., 1890.		
Smith, F., Duke, R.F.D.	....	1905
S. C. Med. Coll., 1868.		
Warren, R. L., Dunn	1911	1912
Tulane Univ., 1911.		

HAYWOOD COUNTY SOCIETY.

President.	....	....
Secretary, J. H. Way, Waynesville	1885	1887
Vanderbilt, 1886		
Abel, J. F., Waynesville	1893	1899
Univ. of Balto., 1892.		
Allen, R. L., Waynesville	1893	1899
Univ. of Md., 1892.		
Greenwood, B. H., Waynesville	1894	1906
Balto. Med. Coll., 1893.		
McCracken, L. R., Waynesville	1902	1903
N. C. Med. Coll., 1902.		
McFayden, H. L., Waynesville	....	1904
Univ. of N. Y., 1876.		
McMahan, J. W., Crestmont	1912	1913
Tenn. Med. Coll., 1900.		
Reynolds, T. F., Canton	1904	1904
N. C. Med. Coll., 1904.		
Russell, J. M., Canton	1911	1911
Univ. of Nashv., 1911.		
Stringfield, S. L., Waynesville	1905	1906
Jeff. Med. Coll., 1905.		

Name and Address	*Licensed*	*Joined State Society*
Stringfield, T., Waynesville	1885	1887
Vanderbilt, 1886.		
Willis, A. P., Canton	1905	1906
Univ. of N. C., 1905.		
Wilson, J. E., Canton	....	1903
Med. Coll., 1876.		

HENDERSON-POLK COUNTY SOCIETY.

President,	....	....
Secretary. Guy E. Dixon, Hendersonville	1903	1903
Phys. & Surgs., St. Louis, 1903.		
Brown, Jas. S., Hendersonville	1894	1894
Northwestern Univ., 1893.		
Drafts, A. B., Hendersonville	....	....
Edgerton, J. L., Hendersonville	....	....
Univ. of Md., 1877.		
Greenwood, S. E., Fletcher	1903	1903
Tenn. Med.		
Hooper, J. O., Saluda	1908	1900
Univ. of Nash., 1908.		
Howe, W. B., Hendersonville	1907	1908
Med. Coll. of S. C., 1906.		
Kirk, W. R., Hendersonville	1901	1903
Centr. Univ. of Ky., 1890.		
Morse, L. B., Hendersonville	1901	1908
Chicago Homeopa. Coll., 1897.		
Salley, E. M., Saluda	1905	1906
Univ. of Md., 1905.		
Summer, T. W., Fletcher	1910	1911
Jeff. Med. Coll., 1910.		

HERTFORD COUNTY SOCIETY.

President, T. I. Burbage, Como	....	1905
Memphis Hosp. Coll. Med., 1882.		
Secretary. C. F. Griffin, Winton	1895	1900
Phys. & Surgs., Balto., 1893.		
Greene, A. W., Ahoskie	1904	1905
Univ. Coll. of Med., Va., 1904.		
Harrell, G. N., Murfreesboro	1907	1907
Univ. Coll. of Med., Richmond, 1907.		
Mitchell, P. H., Ahoskie	1907	1908
Univ. Coll. of Med., Va., 1907.		
Mitchell, J. H., Ahoskie	....	1904
Phys. & Surgs., Balto., 1879.		
Pollard, W. B., Winton	1903	1905
Univ. of Penn., 1899.		
Powell, J. L., Harrellsville	....	....

HYDE COUNTY SOCIETY.

President.	....	....
Secretary.	....	....
Clarke, F. M., Middletown	1894	....
Phys. & Surgs., Balto., 1893.		
Harris, A. G., Fairfield	1907	1907
Univ. of the South, 1905.		
Jones, E. H., Swan Quarter	....	....
Washington Univ., 1872.		

Name and Address	*Licensed*	*Joined State Society*
Mann, J. A., Fairfield	....	....
Univ. of N. Y., 1872.		
Mann, J. E., Lake Landing	1908	1908
Univ. of Md., 1907.		
Swindell, Walter, Scranton	1909	1909
Balto. Med. Coll., 1908.		
Windley, R. E., Swan Quarter	1904	1907
Univ. of Md., 1903.		

IREDELL-ALEXANDER COUNTY SOCIETY.

President, M. R. Adams, Statesville	1884	1884
Univ. of Md., 1878.		
Secretary, J. E. McLaughlin, Statesville	1886	1903
Univ. of Md., 1886.		
Anderson, T. E. (Hon.), Statesville	1878	1878
Jeff. Med. Coll., 1878.		
Campbell, A., Statesville	1878	1878
Univ. of Md., 1878.		
Hall, E. A., Statesville	....	1904
Univ. of Md., 1868.		
Jurney, P. C., Turnersburg	1901	1903
Med. Coll. of Va., 1901.		
Klutz, E. E., Troutman	....	1896
Med. Coll. of Va., 1884.		
Leeper, D. H., Hiddenite	1906	1913
N. C. Med. Coll., 1906.		
Sharpe, F. L., Statesville	1904	1905
Univ. Coll. of Med., 1904.		

JACKSON COUNTY SOCIETY.

President,	....	....
Secretary,	....	....
Nichols, A. A., Sylva	1904	1904
Univ. of Nash., 1898.		
Nichols, A. S., Sylva	1906	1906
Tenn. Med., 1906.		

JOHNSTON COUNTY SOCIETY.

President, Oscar Eason, Princeton	1910	1910
Univ. of N. C., 1910.		
Secretary, L. D. Wharton, Smithfield	1893	1894
Tulane Univ., 1893.		
Coleman, G. S., Kenly	1907	1908
Med. Coll. of Va., 1907.		
Grady, J. C., Kenly	1887	1888
Balto. Univ., 1887.		
Griffin, J. A., Clayton	....	1905
Phys. & Surgs., Balto., 1881.		
Griffin, T. A., Clayton	1912	1912
Univ. of Md., 1912.		
Hooks, T., Smithfield	1901	1903
Med. Coll. of Va., 1901.		
Hinnant, Melford, Micro	1912	1912
Univ. of Md., 1912.		
McLemore, G. A., Clayton	1906	1906
Univ. of N. C., 1900.		

Name and Address	*Licensed*	*Joined State Society*
Montague, S. S., Pine Level	1910	1910
Jefferson, 1910.		
Munns, L. A., Smithfield	1888	1904
Phys. & Surgs., Balto., 1888.		
Myerburg, I. W., Pine Level	1907	1908
Jefferson, 1907.		
Nobles, R. J. (Hon.), Selma	1879	1878
Ky. Med. School, 1878.		
Parker, G. E., Benson	....	1904
Phys. & Surgs., Balto., 1885.		
Person, J. B., Selma	1897	1900
Med. Coll. of Va., 1897.		
Rose, A. H., Smithfield	1906	1906
Jefferson Med., 1906.		
Stanley, Jno. H., Four Oaks	1904	1904
Univ. of N. C., 1904.		
Vick, G. D., Selma	1906	1906
Jefferson, 1906.		

LEE COUNTY SOCIETY.

President, Lynn McIver, Sanford	1902	1902
Ky. Univ., 1901.		
Secretary, E. M. McIver, Jonesboro	1908	1908
Univ. of N. C., 1908.		
Monroe, J. P., Sanford	1901	1901
Phys. & Surgs., Balto., 1901.		
Monroe, Wm. A., Sanford	1886	1888
Univ. of Md., 1886.		
Rosser, Robt. G., Broadway	1909	1911
N. C. Med. Coll., 1909.		
Snipes, E. P., Jonesboro	1892	1892
Vanderbilt Univ., 1890.		
Watson, Leon, Broadway	1900	1900
N. C. Med. Coll., 1900.		

LENOIR COUNTY SOCIETY.

President, R. W. Wooten, Kinston	....	1904
Univ. of Va., 1870.		
Secretary, A. D. Parrott, Kinston	1906	1906
Univ. Coll. of Med., 1906.		
Denny, W. W. (Hon.), Pink Hill	....	....
Hargrove, W. C., Kinston	1901	1901
Univ. of Md., 1901.		
Monk, H. D., Trenton	....	....
Parrott, J. M., Kinston	1895	1896
Tulane, 1895.		
Parrott, W. T., Kinston	1899	1901
Tulane, 1899.		
Tull, Henry (Hon.), Kinston	1876	1876
Univ. of Pa., 1876.		
Whitaker, R. A., Kinston	1885	1885
Phys. & Surgs., Balto., 1885.		

LINCOLN COUNTY SOCIETY.

President, J. W. Saine, Lincolnton	1891	1904
Louis. Med. Coll., 1891.		
Secretary, J. B. Wright, Lincolnton	1899	1899
Univ. Coll. of Med., Va., 1899.		

Name and Address	*Licensed*	*Joined State Society*
Abernethy, H. N., Denver	1894	1898
Louis. Med. Coll., 1894.		
Costner, G. H., Lincolnton	1902	1907
Univ. of Md., 1901.		
Crowell, L. A., Lincolnton	1892	1892
Balto. Med. Coll., 1892.		
Gamble, J. R., High Shoals	....	....
Hoover, C. H., Crouse	1903	1904
Balto. Med. Coll., 1903.		
Jacocks, W. P., Raleigh	....	....
Killian, R. B., Lincolnton	1885	1904
Louis. Med. Coll., 1885.		
Kizer, W. C., Reepsville	....	1904
So. Med. Coll., Ga., 1889.		
Taylor, B. C., Stanley	1902	1907
Univ. of Md., 1901.		
Thompson, C. D., Lincolnton	1901	1904
Univ. of Tenn., 1901.		

MACON-CLAY COUNTY SOCIETY.

President, S. H. Lyle, Franklin	1881	1881
Univ. of Nash., 1881.		
Secretary, Wiley C. Rogers, Franklin	1898	1898
Univ. of Nash., 1898.		
Lapham, Mary E., Highlands	1906	1906
Woman's Med. Coll. of Pa., 1900.		
Siler, F. L., Franklin	1898	1898
Univ. of Nash., 1897.		

NOTE.—The report and the dues for the Macon-Clay Society miscarried in the mails and remained in the post-office at Morehead City for a long while. The list of names and the dues did not reach the Treasurer in time to be included in his 1913 report, but did reach the Secretary before the copy for the Transactions was released. Hence the names are given above, but the amount paid will not appear in the Treasurer's report until 1914.

MADISON COUNTY SOCIETY.

President.	....	....
Secretary.	....	....
Baird, J. H., Mars Hill	1885	1885
Baird, J. W., Mars Hill	....	....
Burnett, J. E., Mars Hill	....	....
Peck, E. J., Hot Springs	....	1903
Vanderbilt Univ., 1879.		
Roberts, Frank, Marshall	1892	1902
Jeff. Med. Coll., 1892.		
Tilson, J. C., Marshall	1885	1904
Tenn. Med. Coll., 1892.		
Woody, S. B., Spring Creek	1898	1898
Vanderbilt Univ., 1892.		

MARTIN COUNTY SOCIETY.

President, J. S. Rhodes, Williamston	1906	1906
Med. Coll. of Va., 1906.		
Secretary, W. E. Warren, Williamston	1893	1904
Phys. & Surgs., N. Y., 1890.		
Fleming, M. J., Hamilton	1906	1906
Jeff. Med. Coll., 1906.		

Name and Address	*Licensed*	*Joined State Society*
Hargrove, R. H., Robersonville	1879	1879
Univ. of Md., 1877.		
Knight, J. B., Williamston	1885	1891
Phys. & Surgs., Balto., 1885.		
Long, B. L., Hamilton	1881	1882
Long, E. M., Oak City	1909	1909
Univ. of Md., 1909.		
Nelson, R. J., Robersonville	1890	1893
Louis. Coll., Ky., 1890.		
Saunders, Jas. H., Williamston	1905	1905
W. C. M., Va., 1905.		
Smithwick, J. E., Jamesville	1907	1904
Med. Coll. of Va., 1891.		
Ward, J. E., Robersonville	1904	1904
Univ. of Md., 1904.		
Williams, J. W., Everetts	1906	1906
Univ. of Md., 1906.		
York, H. B., Williamston	1906	1906
Phys. & Surgs., Balto., 1906.		

McDOWELL COUNTY SOCIETY.

President, M. F. Morphew, Marion	....	1893
Phys. & Surgs., Balto., 1883.		
Secretary, J. F. Jonas, Marion	1903	1903
Balto. Med., 1903.		
Ashworth, B. L., Marion	1893	1895
Phys. & Surgs., Balto., 1893.		
Justice, G. B., Marion	1907	1907
Phys. & Surgs., Atlanta, Ga., 1906.		
Kirby, G. S., Marion	1896	1904
Univ. Coll. of Med., Richmond, Va., 1897.		
McIntosh, D. M., Old Fort	1907	1908
Richmond Coll., 1904.		

MECKLENBURG COUNTY SOCIETY.

President, W. O. Nisbet, Charlotte	1899	1899
Med. Coll of S. C., 1888.		
Secretary, O. B. Ross, Charlotte	1909	1911
Univ. of Penn., 1909.		
Abernethy, J. S., Charlotte	1878	1878
Phys. & Surgs., Balto., 1878.		
Allan, Wm., Charlotte	1906	1908
Phys. & Surgs., Balto., 1905.		
Alexander, Annie L., Charlotte	1885	1885
Woman's Med. Coll., Penn., 1884.		
Alexander, J. R., Charlotte	1894	1898
Univ. of Md., 1894.		
Austin, F. DaCosta, Charlotte	1907	1907
N. C. Med. Coll., 1907.		
Austin, J. A., Charlotte	1882	1887
Jefferson, 1882.		
Barron, A. A., Charlotte	1910	1909
Vanderbilt Univ., 1909.		
Brenizer, A. G., Charlotte	1911	1911
Johns Hopkins; Heidelberg, Germany, 1908.		
Clifford, J. S., Charlotte	1907	1908
Geo. Wash. Univ., 1906.		

Name and Address	*Licensed*	*Joined State Society*
Costner, T. F., Charlotte	1888	1894
Jefferson, 1882.		
Couther, R. S., Charlotte	1911	1911
Balto. Med. Coll., 1911.		
Crowell, A. J., Charlotte	1892	1893
Univ. of Md., 1893.		
Crowell, S. M., Charlotte	....	....
Univ. of Md.		
Davidson, J. E. S., Charlotte	1892	1894
Univ. of Md., 1894.		
DeAmon, J. McC., Charlotte	1886	1886
Univ. of Md., 1886.		
Faison, I. W. (Hon.), Charlotte	1878	1878
Bellevue Med. Coll., 1878.		
Faison, Yates, Charlotte	1910	1912
Harvard, 1910.		
Gibbon, R. L., Charlotte	1887	1887
Jefferson, 1888.		
Graham, W. A., Charlotte	1889	1890
Phys. & Surgs., N. Y., 1888.		
Hand, E. H., Pineville	1907	1907
N. C. Med. Coll., 1907.		
Herron, A. M., Charlotte	1884	1884
S. C. Med. Coll., 1882.		
Hovis, L. W., Charlotte	1904	1906
N. C. Med. Coll., 1904.		
Hunter, L. W., Charlotte	1894	1894
Univ. of Md., 1894.		
Irwin, J. R., Charlotte	1882	1882
Univ. of Md., 1879.		
King, P. M., Charlotte	1904	1906
Bellevue, 1904.		
Laffetty, R. H., Charlotte	1906	1906
N. C. Med. Coll., 1906.		
Leinback, R. F., Charlotte	1908	1909
Univ. of Pa., 1908.		
MacConnell, J. W., Davidson	1908	1909
Univ. of Md., 1907.		
Matheson, J. P., Charlotte	1902	1902
Univ. of Md., 1905.		
McKay, H. W., Charlotte	1911	1912
Jefferson, 1910.		
McLaughlin, C. S., Charlotte	1903	1903
Univ. of N. C., 1896.		
Misenheimer, C. A., Charlotte	1882	1882
Univ. of N. Y., 1882.		
Moore, A. W., Charlotte	....	....
Univ. of Va.		
Moore, Oren, Charlotte	1911	1911
N. C. Med. Coll., 1911.		
Munroe, J. P., Charlotte	1886	1890
Univ. of Va., 1885.		
Myers, J. Q., Charlotte	1904	1904
N. C. Med. Coll., 1906.		
Nalle, B. C., Charlotte	1905	1905
Univ. of Va., 1903.		
Patterson, Reid, Hoskins	1912	1912
N. C. Med. Coll., 1912.		

Name and Address	*Licensed*	*Joined State Society*
Peeler, C. N., Charlotte	1906	1906
N. C. Med. Coll., 1906.		
Petrie, R. W., Charlotte	1903	1903
Univ. of Md., 1903.		
Pressley, G., Charlotte	1895	1895
Jefferson, 1892.		
Query, R. A., Charlotte, R.F.D.	1911	1911
N. C. Med. Coll., 1911.		
Ranson, J. L., Pineville	1911	1911
N. C. Med. Coll., 1911.		
Register, E. C., Charlotte	1887	1887
Univ. of N. Y., 1885.		
Reid, W. K., Charlotte	1896	1896
Univ. of N. Y., 1891.		
Simmons, J. O., Charlotte	1906	1906
Grant's Univ., 1894.		
Squires, J. W., Charlotte	1911	1911
N. C. Med. Coll., 1911.		
Strong, C. M., Charlotte	1898	1898
Univ. of Md., 1898.		
Summers, J. W., Charlotte	1905	1911
N. C. Med. Coll., 1905.		
Trippe, C. M., Charlotte	1911	1911
N. C. Med. Coll., 1911.		
Tucker, J. H., Charlotte	1899	1899
Univ. of Va., 1899.		
Walker, C. E., Charlotte	1891	1904
Univ. of Md., 1891.		
Wakefield, W. H., Charlotte	1891	1893
Ky. Coll. of Med., 1890.		
Wakefield, H. A., Charlotte	1908	1911
N. C. Med. Coll.		
Weatherspoon, B. J., Charlotte	1900	1906
Med. Coll of S. C., 1894.		
Whisnant, A. M., Charlotte	1893	1894
Phys. & Surgs., Balto., 1893.		
Winchester, F. M., Charlotte	1882	1882
Jefferson, 1882.		
Wishart, W. E., Charlotte	1911	1911
N. C. Med. Coll., 1911.		
Witherbee, W. D., Charlotte	1905	1905
McGill Univ., 1899.		
Wooten, W. H., Davidson	1894	1908
N. C. Med. Coll., 1894.		
Wright, T. H., Charlotte	1904	1904
Univ. of Va., 1901.		

MITCHELL-AVERY COUNTY SOCIETY.

President, C. A. Peterson, Spruce Pine	1907	1908
N. C. Med. Coll., 1907.		
Secretary, R. E. Stack, Bakersville	1911	1911
N. C. Med. Coll., 1911.		
Sloop, E. H., Crossnore	1905	1909
Jeff. Med. Coll., 1908.		
Tate, W. C., Banner Elk	1909	1912
Tenn. Med. Coll., 1908.		

MONTGOMERY COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President, A. F. Thompson, Troy	1895	1900
Med. Coll. of Indiana, 1895.		
Secretary, C. Daligny, Troy	1885	1902
French Mil. Med. Sch., 1878.		
Andrews, V. L., Mt. Gilead	....	....
Bowman, E. H., Biscoe	1904	1904
N. C. Med. Coll., 1904.		
Dameron, E. L., Star	....	....
Dowd, J. A., Biscoe	1907	1909
N. C. Med. Coll., 1902.		
Ingram, Chas. B., Mt. Gilead	1886	1892
Jefferson, Pa., 1886.		
Shamburger, J. B., Star	1890	1892
Univ. of Md., 1890.		

MOORE COUNTY SOCIETY.

President, H. B. Shields, Carthage	1887	1904
Atlanta Med. Coll., 1882.		
Secretary, M. L. Matthews, Cameron	1903	1903
Univ. of N. C., 1903.		
Bethune, A. C., Aberdeen	....	....
Blair, A. McN., Southern Pines	1905	1905
Univ. of N. Y., 1897.		
Grier, C. T., Carthage	....	....
Matthews, J. H., Vass	1907	1908
Univ. of N. C., 1907.		
McDonald, A. A., Jackson Springs	1905	1912
N. C. Med. Coll., 1905.		
McLeod, A. H., Aberdeen	1896	1904
Balto. Med. Coll., 1896.		
McLeod, G. M., Carthage	1885	1904
Univ. of Md., 1882.		
MacMillan, J. M., Hemp	1909	1910
Atlanta Coll. Phys. & Surgs., 1909.		
Mudgett, W. C., Southern Pines	1908	1908
Univ. of Md., 1903.		
Swett, W. P., Southern Pines	....	1901
Univ. of Vermont, 1896.		
Wilcox, J. W., Aberdeen	1906	1906
Univ. of N. C., 1906.		

NEW HANOVER COUNTY SOCIETY.

President, J. G. Murphy, Wilmington	1903	1905
Univ. of Louis., 1903.		
Secretary, D. W. Bullock (Hon.), Wilmington	1875	1875
Univ. of Md., 1873.		
Akerman, J., Wilmington	1905	1906
Johns Hopkins, 1905.		
Bellamy, R. H., Wilmington	....	....
Bellamy, W. J. (Hon.), Wilmington	....	....
Borneman, J. H., Wilmington	....	....
Bowles, C. P., Wilmington	1908	1908
Univ. of Va., 1897.		
Bullock, E. S., Wilmington	1911	1911
Univ. of Md., 1911.		

Name and Address	*Licensed*	*Joined State Society*
Burbank, T. S., Wilmington	....	1904
Bellevue Med. Coll., 1886.		
Caldwell, M. M., Wilmington	....	....
Cranmer, J. B., Wilmington	1905	1906
Univ. of N. C., 1905.		
Galloway, W. C. (Hon.), Wilmington	1880	1880
Wash. Univ., Md., 1874.		
Green, T. M., Wilmington	1900	1903
Univ. of Md., 1900.		
Guin, J. L., Wilmington	....	....
Hall, W. (Hon.), Wilmington	1900	1900
Univ. of Md., 1900.		
Harper, C. T., Wilmington	1893	1904
Univ. of Md., 1894.		
Harris, A. H., Wilmington	1892	1904
Med.-Chi., Phila., 1893.		
Honnett, J. H., Wilmington	1901	1904
Phys. & Surgs., N. Y., 1900.		
Koonce, S. E., Wilmington	1896	1900
Phys. & Surgs., Balto., 1896.		
Love, W. J. (Hon.), Wilmington	....	....
McDonald, D. D. (Hon.), Wilmington	....	....
McMillan, W. D. (Hon.), Wilmington	....	....
Moore, H. T., Wilmington	....	....
Moore, W. H., Wilmington	1910	1911
Jefferson, 1910.		
Nesbitt, C. T., Wilmington	....	....
Russell, F. R., Wilmington	1893	1893
Univ. of Md., 1893.		
Schoenwald, J. L. (Hon.), Wilmington	....	....
Thomas, G. G. (Hon.), Wilmington	....	....
Wessell, J. C., Wilmington	1900	1900
Univ. of Md., 1900.		
Willingham, B. J., Wilmington	1906	1906
Med. Coll. of Va., 1906.		
Wood, E. J., Wilmington	....	....

NORTHAMPTON COUNTY SOCIETY.

President, J. L. Lister, Jackson	1896	1909
Med. Coll. of Va., 1896.		
Secretary, P. C. Brittle, Conway	....	....
Bolton, M., Rich Square	1885	1885
Jeff. Med. Coll., 1885.		
Cooke, C. H., Woodland	1905	1905
Univ. of N. C., 1905.		
Joyner, T. O., Severn	1900	1904
Univ. Coll. of Med., 1899.		
Lassiter, E. W., Rich Square	1908	1908
Univ. Coll. of Med., Richmond, 1908.		
Lewis, H. W., Jackson	....	1887
Univ. of N. Y., 1877.		
Morehead, R. F., Weldon	1895	1900
Phys. & Surgs., Balto., 1895.		
Naff, G. N., Garysburg	....	....
Parker, C. G., Woodland	....	....
Stancell, R. H., Margarettsville	1877	....
Med. Coll. of Va., 1886; Bellevue, N. Y., 1870.		
Whyms, T. G., Lasker	....	....

ONSLOW COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President, H. O. Hyatt, Kinston	1870	1870
Univ. of Penn., 1868.		
Secretary, L. D. Bryan, Snead's Ferry	1910	1910
Tulane, 1910.		
Blount, F. H., Swansboro	....	....
Brown, F. L., Scott's Hill	....	....
Cox, E. L., Jacksonville	1889	1892
Univ. of Md., 1889.		
Daniels, R. L., Swansboro	....	....
Hughs, G. R., Polloksville	1888	1894
Univ. of N. Y., 1888.		
Hyatt, A. L., Kinston	1910	1910
Univ. of Md., 1910.		
Kornegay, G. F., Kinston	....	....
Nicholson, J. L. (Hon.), Richlands	1875	1880
Univ. Med. Coll., N. Y., 1875.		
Sutton, C. W., Richlands	1905	1905
Tulane Med. Coll., 1905.		
Thompson, C., Jacksonville	....	1905
Univ. of Pa., 1878.		

ORANGE COUNTY SOCIETY.

President.	....	....
Secretary.	....	....
Abernethy, E. A., Chapel Hill	....	....
Lloyd, B. B., Venable	....	....
Univ. of N. C., 1909.		
MacNider, W. deB., Chapel Hill	....	....
Univ. of N. C.		
Mangum, C. S., Chapel Hill	....	....
Jeff. Med. Coll.		
Manning, I. H., Chapel Hill	1899	....
Long Island New H., 1897.		
Mebane, W. N., Hillsboro	....	....
Webb, L. H., Chapel Hill	1910	....
Jeff. Med. Coll., 1910.		
Williams, T. R., Venable	....	....

PAMLICO COUNTY SOCIETY.

President, G. S. Attmore, Stonewall	1870	1872
Wash. Univ., Balto., 1870.		
Secretary, O. C. Daniels, Oriental	1903	1905
Med. Coll. of Va., 1903.		
Dees, D. A., Bayboro	1903	1903
Balto. Coll. Med., 1903.		
McCotter, S. E., Bayboro	1908	1908
Phys. & Surgs., Atlanta, Ga.		
Watts, R. E., Oriental	....	....

PASQUOTANK COUNTY SOCIETY.

President, I. Fearing, Elizabeth City	....	1904
Univ. of Md., 1881.		
Secretary, Z. Fearing, Elizabeth City	1896	1904
Phys. & Surgs., Balto., 1896.		
Aydlett, H. T., Elizabeth City	1895	1896
Univ. of Va., 1894.		

Name and Address	*Licensed*	*Joined State Society*
Conn, B. W., South Mills	1905	1908
Med. Coll. of Va., 1884.		
Griggs, J. B., Elizabeth City	1892	1904
Univ. of Md., 1892.		
Hoggard, W. A., Woodville	....	....
Lumsden, W. J., Elizabeth City	....	1888
Univ. of Md., 1869.		
McMullan, O., Elizabeth City	....	1889
Univ. of Va., 1880.		
Sawyer, C. W., Elizabeth City	....	1904
Univ. of Md., 1886.		
Sawyer, W. W., Elizabeth City	1903	1905
Univ. of Md., 1903.		
Sutton, C. A., Manteo	....	....
Walker, H. D., Elizabeth City	1902	1902
Univ. of Md., 1902.		
Williams, C. B., Elizabeth City	1903	1906
Univ. Coll. of Med., Va., 1903.		

PENDER COUNTY SOCIETY.

President, R. H. Bradford, Burgaw	1904	1905
N. C. Med. Coll., 1904.		
Secretary, J. T. Hoggard, Atkinson	1907	1907
Univ. Coll. of Med., Richmond, Va.		

PERSON COUNTY SOCIETY.

President, R. S. Baynes, Hurdle Mills	1881	1904
Phys. & Surgs., Balto., 1881.		
Secretary, A. F. Nichols, Roxboro	1908	1908
Univ. of N. C., 1908.		
Bradsher, W. A., Roxboro	1904	1905
Univ. of Md., 1904.		
Gentry, G. W., Timberlake	....	....
Univ. of N. C.		
Long, W. T., Roxboro	....	....
Love, B. E., Roxboro	1904	1904
Univ. of Md., 1904.		
Merritt, J. H., Woodsdale	1907	1908
Univ. of N. C., 1906.		
Nichols, C. G., Roxboro	1885	1891
Bellevue—non-grad.		
Schaub, O. P., Roxboro	1898	1898
Balto. Med. Coll., 1898.		
Swann, J. F., Semora	1898	1904
Phys. & Surgs., Balto., 1898.		
Warren, R. F., Prospect Hill	....	....

PITT COUNTY SOCIETY.

President, J. E. Nobles, Greenville	1899	1902
Jeff. Med. Coll., 1899.		
Secretary, L. C. Skinner, Greenville	1901	1902
Univ. of Md., 1901.		
Basnight, T. G., Greenville	1905	1906
Univ. of Md., 1904.		
Dixon, W. H., Ayden	1901	1901
Med. Coll. of Va., 1901.		

Name and Address	*Licensed*	*Joined State Society*
Fountain, W. M., Greenville	1899	1899
Univ. Coll. of Med., Va., 1899.		
Griffin, C. O., Bethel	....	....
Jones, C. M., Grimesland	1892	1895
Univ. of Md., 1892.		
Laughinghouse, C. O'H., Greenville	1893	1894
Univ. of Pa., 1893.		
Ward, V. A., Bethel	....	....

RANDOLPH COUNTY SOCIETY.

President,	....	....
Secretary, W. J. Moore, Asheboro	1893	1896
Phys. & Surgs., Balto., 1893.		
Asbury, F. E., Worthville	1885	1896
S. C. Med. Coll., 1876.		
Fox, T. I., Franklinville	1897	1896
Vanderbilt, 1894.		
Hunter, J. V., Ashboro	1898	....
Univ. of Louisville, Ky., 1898.		
Hubbard, C. C., Randleman	1890	1904
Jeff. Med. Coll., 1888.		
Phillips, C. H., Fullers	1893	....
Balto. Univ., 1892.		
Summer, W. J., Randleman	1894	1894
Univ. of Tenn., 1893.		

ROBESON COUNTY SOCIETY.

President, N. A. Thompson, Lumberton	1895	1904
Med. Coll. of Md., 1905.		
Secretary, B. W. Page, Lumberton	1909	1910
Tulane Univ., 1909.		
Andrews, N. H., Pembroke	....	....
Ayers, T. B., Proctorville	1911	....
Univ. Coll. of Med., 1911.		
Brown, J. P., Fairmont	....	1904
Univ. of Md., 1883.		
Croom, A. B., Maxton	1905	1905
Univ. of Md., 1905.		
Croom, J. D., Maxton	1876	1887
Med. Coll. of S. C.		
Currie, D. S., Parkton	1906	1906
N. C. Med. Coll., 1906.		
Earley, W. W., Marietta	....	....
Evans, W. E., Rowland	1894	....
Med. Coll. of Va., 1894.		
Gibson, M. R., Maxton	1905	1908
Univ. of Md., 1905.		
Grantham, W. L., Lumberton	1906	1906
N. C. Med. Coll., 1906.		
Harris, D. W., Maxton	1906	1910
Univ. of N. C., 1906.		
Hodgin, H. H., Red Springs	1906	1906
Univ. of Md., 1905.		
Johnston, T. L., Lumberton	1905	1905
Univ. Coll. of Med., Va., 1905.		
Knox, J., Lumberton	1906	1907
Univ. of Md., 1906.		

Name and Address	*Licensed*	*Joined State Society*
Kirkpatrick, L. R., Maxton	1902	1902
N. C. Med. Coll., 1902.		
McCleveland, J. C., Maxton	1903	1913
Univ. Coll. of Med., Va.		
McMillan, J. L., Red Springs	1881	1902
Univ. of Md., 1881.		
McMillan, R. D., Red Springs	1911	1912
Univ. of Md., 1910.		
McMillan, B. F., Red Springs	1882	1884
Univ. of Md., 1882.		
McPhaul, W. A., Lumberton	1905	1906
Univ. of Wash., 1904.		
Norment, T. A., Lumberton	....	....
Univ. of Md.		
Northrop, T. L., St. Pauls	1897	1897
Univ. of Md., 1897.		
Pate, C. M., Raynham	....	....
Univ. of Md., 1894.		
Poole, C. E., St. Pauls	1908	1908
N. C. Med. Coll., 1908.		
Pope, H. T., Lumberton	1893	1894
N. C. Med Coll., 1894.		
Reedy, H., Rowland	1884	1904
Med. Coll. of S. C., 1879.		
Ricks, L. E., Fairmont	1896	1898
Med. Coll. of Va., 1896.		
Rozier, R. G., Rozier	1898	1898
Univ. of Md., 1898.		
Schubert, L. H., Asheboro	....	....
Smith, J. McN., Rowland	1908	1909
Jefferson, 1908.		
Stamps, T., Lumber Bridge	1888	1888
Univ. of Louis., 1888.		
Stevens, W. F., Fairmont	....	....
Chattanooga Med.		
Surles, J. B., Lumber Bridge	1909	1910
Jefferson, 1909.		

ROCKINGHAM COUNTY SOCIETY.

President, S. B. Ellington, Wentworth	....	....
Jeff. Med. Coll., 1877.		
Secretary, J. B. Ray, Leaksville	1898	1898
Balto. Med. Coll.		
Abernethy, A. B., Reidsville	1906	1906
N. C. Med. Coll.		
Boaz, T. A., Stoneville	1892	1892
Phys. & Surgs., Balto.		
Cummins, M. P., Reidsville	1911	1911
Jeff. Med. Coll.		
Jett, S. G., Reidsville	1908	1903
Univ. of South, 1903.		
Johnson, W. A., Reidsville	1909	1909
N. C. Med. Coll., 1907.		
Martin, S. L., Leaksville	1892	1896
Balto. Med. Coll., 1892.		
Matheson, R. C., Madison	....	....
Phys. & Surgs., Balto.		

Name and Address	*Licensed*	*Joined State Society*
McBryde, M. H., Reidsville	1901	1904
Univ. of Md., 1901.		
McGehee, J. W., Reidsville	1904	1904
Univ. of Md.		
Sweany, J., Spray	....	1888
Phys. & Surgs., Balto., 1886.		
Taylor, J. T., Madison	1907	1908
Univ. of Md.		
Taylor, T. J., Leaksville	1877	....
Ky. School of Med.		
Tuttle, A. F., Spray	1901	1901
N. C. Med. Coll.		
Webb, S. E., Draper	1908	1908
N. C. Med. Coll.		
Wharton, C. R., Ruffin	1897	1897
Med. Coll. of Va.		
Wilson, W. P., Madison	1908	1909
N. C. Med. Coll., 1908.		

ROWAN COUNTY SOCIETY.

President, J. W. Whitehead (Hon.), Salisbury	1880	1880
Univ. of Penn., 1880.		
Secretary, E. W. Currie, Salisbury	1907	1907
N. C. Med. Coll., 1907.		
Brawley, R. V., Salisbury	1903	1904
Univ. of Med., Va., 1903.		
Brown, G. A., Mt. Ulla	1897	1898
Univ. of Va., 1897.		
Busby, J. G., Spencer	1904	1904
Univ. of Md., 1904.		
Caldwell, J. A., Salisbury	1905	1905
Johns Hopkins, 1904.		
Choate, G. W., Rockwell	1909	1909
N. C. Med. Coll., 1909.		
Clement, E. B., Salisbury	....	....
Council, J. B., Salisbury	1882	1884
Phys. & Surgs., Balto., 1884.		
Crump, W. L., Salisbury	1881	1904
Jefferson Med., 1879.		
Edwards, B. O., Landis	1905	1905
N. C. Med. Coll., 1905.		
Heilig, H. G., Salisbury	1899	1904
Univ. of Md., 1899.		
McKenzie, W. W., Salisbury	1893	1894
Jeff. Med. Coll., 1893.		
Monk, G. M., Spencer	1908	1908
Univ. of N. C., 1908.		
Monk, H. L., Spencer	1899	1903
Med. Coll. of Va., 1897.		
Van Poole, C. M. (Hon.), Salisbury	1880	1880
Phys. & Surgs., Balto., 1880.		
Ramseur, G. A., China Grove	1885	1890
Jefferson, Pa., 1880.		
Sigmon, F. G., Spencer	1909	1909
Univ. Coll. of Med., Va., 1909.		
Spencer, F. B., Salisbury	1909	1910
Univ. of N. C., 1909.		

Name and Address	*Licensed*	*Joined State Society*
Stokes, J. E., Salisbury	1900	1901
Univ. of Md., 1892.		
Summerell, E. N. (Hon.), China Grove	1883	1883
Univ. of Penn., 1883.		
Trantham, H. L. (Hon.), Salisbury	1878	1879
Univ. of N. Y., 1875.		
West, R. M., Salisbury	1900	1900
Med. Coll. of Va., 1900.		
Woodson, C. W., Salisbury	1905	1906
Phys. & Surgs., Balto., 1904.		

RUTHERFORD COUNTY SOCIETY.

President, J. C. Twitty, Rutherfordton	1892	1906
Balto. Med. Coll., 1892.		
Secretary, W. C. Bostic, Forest City	1905	1905
Grant Univ., 1905.		
Allhand, J. M., Cliffside	1910	1911
Coll. Med. and Surg., 1910.		
Andrews, R. M., Rutherfordton	1904	1905
Memph. Hosp. Coll., 1904.		
Biggs, M. H., Rutherfordton	1907	1907
Univ. of Penn., 1897.		
Gold, Chas. F., Ellenboro	1910	1910
Univ. of N. C., 1910.		
Harrill, L. B., Caroleen	1902	1903
Grant Univ., 1897.		
Harris, Edgar B., Rutherfordton	....	1905
Phys. & Surgs., 1876.		
Hicks, Romeo, Henrietta	....	....
Sou. Med., Atlanta, 1888.		
Lovelace, Thos. B., Henrietta	1885	1904
Phys. & Surgs., Balto., 1883.		
Norris, Henry, Rutherfordton	1907	1909
Univ. of Pa., 1896.		
Reid, G. P., Forest City	1894	1899
Univ. Coll. of Med., Va., 1895.		
Rucker, A. A., Rutherfordton	1908	1908
Univ. of Md., 1908.		
Shull, J. Rush, Cliffside	1911	1912
Univ. of Penn., 1911.		
Smart, Jas. B., Forest City	1907	1911
Grant Univ., 1900.		
Thompson, J. B., Bostic	1898	1904
Phys. & Surgs., Balto., 1899.		
Thompson, W. A., Rutherfordton	....	1904
Phys. & Surgs., Balto., 1885.		
Washburn, Ben E., Raleigh	....	1913
Univ. of Va., 1910.		
Wiseman, C. B., Henrietta	1902	1902
Phys. & Surgs., Balto., 1902.		

SAMPSON COUNTY SOCIETY.

President, J. O. Matthews, Clinton	1897	....
Univ. Coll. of Med., Richmond, 1897.		
Secretary, F. H. Holmes, Clinton	1895	1895
Univ. of Md., 1895.		

Name and Address	*Licensed*	*Joined State Society*
Cooper, Geo. M., Clinton	1905	1905
Univ. Coll. of Med., Va., 1905.		
Crumpler, Paul, Roseboro	1907	1907
Univ. of Tenn., 1907.		
Kerr, J. D., Jr., Clinton	1908	1909
Univ. of Md., 1908.		
McLean, R. H., Dunn	1886	....
Sikes, G. L., Salemburg	1900	....
Univ. Coll. of Med., Richmond.		
Sloan, H., Ingold	1885	1902
S. C. Med. Coll., 1881.		
Stevens, J. A., Clinton	1883	1883
Jeff. Med. Coll., 1883.		
Taylor, W. I., Kerr	1904	....
Underwood, O. E., Earnest	1909	1910
Univ. Coll. of Med., 1909.		
Wilson, R. B., Newton Grove	1889	1904
Ky. School of Med., 1889.		

SCOTLAND COUNTY SOCIETY.

President, W. G. Shaw, Wagram	1895	1904
Phys. & Surgs., Balto., 1892.		
Secretary, P. McLean, Laurinburg	1907	1907
Univ. of Md., 1906.		
Erwin, E. W., Laurinburg	1912	1912
Med. Coll. of S. C., 1912.		
Everington, G. D., Laurinburg	1898	1898
N. C. Med. Coll., 1899.		
Gibson, J. S., Gibson	1905	1905
Univ. of Md., 1905.		
James, W. D., Laurinburg	1908	1908
Jefferson, 1908.		
John, P., Laurinburg	1897	1904
Univ. of Md., 1897.		
Livingston, E., Gibson	1912	1912
Univ. of Md., 1912.		
McLean, A., Wagram	1908	1908
Univ. of Md., 1908.		
Pate, W. T., Gibson	1895	1895
Phys. & Surgs., Balto., 1895.		
Prince, D. M. (Hon.), Laurinburg	1871	1878
S. C. Med. Coll., 1871.		

STANLY COUNTY SOCIETY.

President, D. P. Whittly, Albemarle	1890	1890
Univ. of Md., 1890.		
Secretary, J. C. Hall, Albemarle	1899	1899
Univ. Coll., Richmond, 1890.		
Allen, J. A., New London	1901	1906
Univ. Coll. of Med.		
Anderson, J. N., Albemarle	1895	1895
Univ. of Md., 1895.		
Cox, B. F., Palmerville	1886	1888
Phys. & Surgs., Balto.		
Dunlap, L. V., Albemarle	1909	....
Univ. of N. C., 1909.		

Name and Address	*Licensed*	*Joined State Society*
Hartsell, F. E., Big Lick	1895	1905
Balto. Med. Coll., 1895.		
Hathcock, T. A., Norwood	1893	1904
Univ. of Md., 1893.		
Hill, W. J., Albemarle	1897	1904
Univ. of Md.		
Laton, J. F., Albemarle	1904	1908
N. C. Med. Coll.		
McGruder, L. F., Albemarle	....	....

STOKES COUNTY SOCIETY.

President,	....	....
Secretary,	....	....
Ellington, J. H., Sandy Ridge	....	....
Phys. & Surgs., Balto., 1872.		
Hill, J. H. (Hon.)	....	....
Jones, A. G., Walnut Cove	....	....
Univ. of N. Y.		
McCanless, W. L., Danbury	1893	1904
Univ. of N. Y., 1893.		
McCanless, W. V., Danbury	....	....
Phillips, M. D., Dalton	1881	1904
Univ. of N. Y., 1881.		
Tuttle, R. G., Walnut Cove	....	....

SURRY COUNTY SOCIETY.

President, J. M. Flippin, Mt. Airy	1884	....
Phys. & Surgs., Balto.		
Secretary, E. M. Hollingsworth, Mt. Airy	1886	1904
Phys. & Surgs., Balto.		
Absher, Darius C., Mt. Airy	1909	1910
Univ. of Md., 1909.		
Allred, E. B., Mt. Airy	1877	1904
Jeff. Med. Coll.		
Ashby, T. B., Mt. Airy	1885	1896
Phys. & Surgs., Balto.		
Baird, C. A., Mt. Airy	1909	1909
Flippin, R. E. L., Pilot Mountain	1897	1897
Balto. Med. Coll., 1892.		
Flippin, S. T., Sylvan	1898	1898
N. C. Med. Coll., 1898.		
Hollingsworth, R. E., Mt. Airy	1898	1904
Univ. Coll. of Med., Va.		
Lovill, Robt. J., Dobson	1910	1910
Univ. of Md., 1910.		
Reece, J. M., Elkin	....	1904
Phys. & Surgs., Balto., 1886.		
Ring, J. W., Elkin	....	1904
Phys. & Surgs., Balto., 1880.		
Royall, Miles A., Elkin	1885	1891
Phys. & Surgs., Balto., 1885.		
Salmon, L. R., Elkin	....	....
Smith, J. B., Pilot Mountain	1885	1896
Phys. & Surgs., Balto.		
Stone, W. M., Dobson	1906	1907
N. C. Med. Coll.		

Name and Address	*Licensed*	*Joined State Society*
Taylor, W. S., Mt. Airy	1874	1894
Jeff. Med. Coll.		
Welborn, Wm. R., Elkin	1908	1908
N. C. Med. Coll., 1905.		
Woltz, Jno. L., Mt. Airy	1902	1902
Southern Med., 1897.		

TRANSYLVANIA COUNTY SOCIETY.

President, C. W. Hunt, Brevard	1880	1903
Phys. & Surgs., Balto., 1880.		
Secretary, E. S. English, Brevard	1902	1902
Univ. of South, 1901.		
Cheatham, G., Brevard	1895	1896
N. C. Med. Coll., 1895.		
Lyday, A. L., Penrose	1909	1900
Tenn. Med. Coll., 1891.		
Lyday, C. E., Rosmon	1911	1911
Atlanta Med. Coll.		
Wallis, W. J., Brevard	1892	1903
Phys. & Surgs., Balto., 1892.		

UNION COUNTY SOCIETY.

President, A. D. N. Whittley, Unionville	1897	1904
Non-graduate Univ. of Md.		
Secretary, H. D. Stewart, Monroe	1898	1898
Univ. of Md., 1898.		
Armfield, Romulus, Marshville	1883	....
Med. Coll. of Va., 1881.		
Ashcraft, J. E., Monroe	1887	1888
Univ. of N. Y., 1887.		
Blair, John M., Monroe	1886	1886
Louis. Med. Coll., 1887.		
Blair, M. P., Marshville	1895	1895
Med. Coll. of Va., 1895.		
Boger, D. T., Unionville	1906	1906
N. C. Med. Coll., 1906.		
Eubanks, J. B., Monroe	....	1904
Vanderbilt Univ., 1887.		
Fitzgerald, Jesse Y., Indian Trail	1889	1889
Jeff. Med. Coll., 1889.		
Guion, L. E., Waxhaw	1907	1908
N. C. Med. Coll., 1907.		
Jerome, J. R., Wingate	....	1904
Univ. of Md., 1890.		
McCain, W. R., Waxhaw	1898	1906
Univ. of Md., 1897.		
Nance, Geo. B., Monroe	1885	1885
Jefferson, 1885.		
Neal, G. W., Monroe	1887	1902
Univ. of N. Y. Med. Coll., 1884.		
Payne, R. L., Monroe	1912	1912
Tulane Univ., 1912.		
Perkins, D. R., Marshville	1906	1906
Balto. Med. Coll., 1903.		
Stevens, S. A., Monroe	1899	1899
Univ. of Md., 1900.		

VANCE COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President,	....	....
Secretary,	....	....
Adams, D. C., Kittrell	....	....
Allen, B. G., Henderson	1904	1904
Bellevue Med. Coll., 1904.		
Bass, H. H., Henderson	1899	1900
Univ. Coll. of Med., 1899.		
Chapin, W. B., Townsville	1909	1909
Univ. of N. C., 1909.		
Fenner, Edwin F., Henderson	1906	1907
Univ. of Md., 1905.		
Furman, W. R.	....	....
Gill, R. J., Henderson	1880	1890
Univ. of Penn., 1880.		
Harris, Fletcher R., Henderson	....	....
Univ. of Va., 1881.		
Morton, N. D., Manson	1909	1911
Univ. Coll. of Med., Va., 1909.		
Perkins, F. E., Henderson	1905	1911
Univ. of N. Y., 1905.		
Upchurch, R. G., Henderson	....	....

WAKE COUNTY SOCIETY.

President, H. A. Royster, Raleigh	1894	1895
Univ. of Penn., 1894.		
Secretary, W. C. Horton, Raleigh	1896	1896
Phys. & Surgs., Balto., 1897.		
Abernethy, C. O., Raleigh	1906	1906
Univ. of N. C., 1906.		
Anderson, Albert, Raleigh	1888	1889
Univ. of Va., 1888.		
Battle, K. P. (Hon.), Raleigh	....	1889
Univ. of Va., 1881.		
Burtt, B. W., New Hill	1886	....
Phys. & Surgs., Balto., 1886.		
Campbell, A. C., Raleigh	1910	1912
Univ. of N. C., 1910.		
Carroll, Elizabeth Delia Dixon, Raleigh	1900	1900
Woman's Med. Coll., N. Y. S.		
Carstarphen, W. T., Wake Forest	....	....
Caviness, Z. M., Raleigh	1903	1903
Med. Dept. Univ. of N. C., 1903		
Ferrell, Jno. A., Raleigh	1907	1908
Univ. of N. C., 1907.		
Goodwin, A. W., Raleigh	1889	1889
Bellevue, 1887.		
Johnson, R. W., Apex	1901	1901
Univ. of Tenn., 1900.		
Judd, J. M., Cardenas	1899	1899
Balto. Med. Coll., 1897.		
Jordan, T. M., Raleigh	1881	1881
Phys. & Surgs., Balto., 1881.		
Knox, A. W., Raleigh	1878	1880
Bellevue Med. Coll., 1874.		
Lewis, R. H. (Hon.), Raleigh	1877	1877
Univ. of Md., 1871.		

Name and Address	*Licensed*	*Joined State Society*
Lowery, J. R., Raleigh	....	....
McCullers, J. J. L., McCullers Phys. & Surgs., Balto., 1886.	1886	1886
McGee, Jas. Wm., Raleigh Bellevue Hosp. Med., 1888.	1888	1888
Moore, J. L., Wendell Phys. & Surgs., 1886.	1886	1892
Penny, J. A. J., Vanteen Univ. of N. Y., 1861.	....	1904
Pendleton, A. S., Raleigh Univ. of Penn., 1895.	1898	1899
Powers, J. B., Sr., Wake Forest Long Island Med. Coll., 1878.	1885	1904
Powers, J. B., Jr., Wake Forest Columbia, 1907.	1907	1911
Rankin, W. S., Raleigh Univ. of Md., 1901.	1901	1901
Ray, O. L., Raleigh Univ. Coll. of Med., Va., 1899.	1899	1904
Rogers, J. R., Raleigh Phys. & Surgs., Balto., 1886.	1886	1904
Root, A. S., Raleigh	....	....
Haywood, Hubert, Jr., Raleigh Bellevue, 1879.	1889	1889
Royster, W. I. (Hon.), Raleigh Bellevue Med. Coll., 1869.	1869	1870
Shore, C. A., Raleigh Johns Hopkins, Balto., 1907.	1909	1909
Sorrell, L. P., Raleigh Med. Coll. of Va., 1875.	....	1904
Stevens, R. S., Raleigh Univ. of N. C., 1905.	1905	1906
Strickland, J. A., Zebulon Univ. of N. C., 1909.	1909	1910
Templeton, J. M., Cary Balto. Med. Coll., 1882.	1882	1904
Thompson, S. W., Neuse Med. Coll. of Va., 1875.	....	1904
Tucker, H. McK., Raleigh Univ. of Md., 1899.	1899	1899
Turner, H. G., Raleigh	....	....
Underhill, H. P., Wendell Univ. Coll. of Med., 1901.	1901	1901
Watson, J. B., Raleigh	....	....

WARREN COUNTY SOCIETY.

President, P. J. Macon, Warrenton Univ. of Md., 1883.	1883	1883
Secretary, C. H. Peete, Warrenton Univ. of Va., 1903.	1906	1906
Holt, Thos. J., Wise Med. Coll. of Va., 1904.	1904	1904
Macon, G. H., Warrenton Univ. Coll. of Med., Va., 1910.	1910	1910
Perry, M. P., Macon Coll. Phys. & Surgs., Md., 1884.	1884	1884

WASHINGTON-TYRRELL COUNTY SOCIETY.

Name and Address	*Licensed*	*Joined State Society*
President, M. H. Hardison, Creswell Wash. Univ. of Med., 1870.	....	1904
Secretary, W. H. Ward, Plymouth Univ. of Md., 1881.	1886	1900
Dissoway, A. W., Plymouth Univ. of Md., 1905.	1905	1908
Flowers, C. A., Columbia Phys. & Surgs., Balto., 1905.	1907	1907
Gilmer, B. H., Plymouth Univ. Coll. of Med., Va., 1903.	1910	1910
Halsey, B. F., Roper Vanderbilt Univ., 1893.	1894	1894
Hassell, J. L., Creswell Phys. & Surgs., Balto., 1886.	1886	1908
Marriner, N. B., Belhaven Univ. Coll. of Med., Va.	1907	1908
Speight, J. W., Roper Ky. School of Med., 1885.	1885	1908
Stancell, W. W., Raleigh	....	....
Spruill, Jos. L., Columbia Univ. of Md., 1895.	1895	1908

WAYNE COUNTY SOCIETY.

President, T. L. Ginn, Goldsboro Med. Coll. of Va., 1901.	1901	1901
Secretary, W. H. Smith, Goldsboro Univ. of Penn., 1906.	1907	1908
Bizzell, Thos., M., Goldsboro Univ. of Md., 1908.	1908	1908
Brothers, J. E., Goldsboro Bellevue Med. Coll., 1874.	1874	1910
Exum, W. P., Jr., Goldsboro Med. Coll. of Va., 1901.	1902	1904
Faison, W. W. (Hon.), Goldsboro Jeff. Med. Coll., 1878.	1883	1904
Kennedy, J. B., Goldsboro Univ. of Nash., 1870.	....	1904
Kornegay, L. W., Mt. Olive N. C. Med. Coll., 1906.	1906	1906
Lee, R. E., Goldsboro Univ. of Md., 1896.	1896	1898
Miller, R. B., Goldsboro Med. Coll. of Va., 1898.	1900	1901
Morris, G. B., Mt. Olive Balto. Med. Coll., 1909.	1909	1912
Parker, J. R., Goldsboro Univ. Coll. of Med., Va., 1901.	1901	1904
Person, E. C., Pikeville Med. Coll. of Va., 1904.	1904	1904
Robinson, M. E., Goldsboro Balto. Med. Coll., 1870.	....	1880
Smith, Roger A. (Honorary Fellow), Goldsboro Vanderbilt Univ., 1879.	1882	1882
Steele, W. C., Mt. Olive Univ. of Md., 1894.	1891	1894

Name and Address	*Licensed*	*Joined State Society*
Strosnider, C. F., Mt. Olive	1910	1913
Univ. of Md., 1909.		
Sutton, W. G., Seven Springs	1889	1896
Jeff. Med. Coll., 1889.		
Turlington, W. T., Fremont	1894	1895
Phys. & Surgs., Balto., 1894.		

WILKES COUNTY SOCIETY.

President, F. H. Gilreath, North Wilkesboro	1898	1898
Univ. of Tenn., 1898.		
Secretary, C. S. Sink, North Wilkeksboro	1912	1912
N. C. Med. Coll.; Univ. Coll. of Med., Va.		
Secretary, C. S. Sink, North Wilkesboro	1912	1912
Univ. Coll. of Med., Va., 1907.		
Horton, W. P., North Wilkesboro	1896	1904
Balto. Med. Coll., 1892.		
Hutchins, E. M., North Wilkesboro	1896	1904
N. C. Med. Coll.		
Jeffries, Thos. N., Mulberry	1912	....
Jeff. Med. Coll.		
Townsend, M. L., North Wilkesboro	1906	1913
Indiana Med. Coll.		
Turner, J. M., North Wilkesboro	....	1904
Univ. of Louis., Ky., 1881.		
White, J. W., Wilkesboro	1889	1890
Jeff. Med. Coll., 1889.		

WILSON COUNTY SOCIETY.

President, M. M. Saliba, Wilson	1910	1910
Balto. Med. Coll., 1897.		
Secretary, E. T. Dickinson, Wilson	1895	1895
Med. Coll. of Va., 1895.		
Anderson, W. S., Wilson	1880	1880
Balto. Med. Coll., 1868.		
Barnes, B. F., Elm City	1902	1902
Univ. of Md., 1902.		
Best, Henry B., Wilson	1907	1907
Univ. of N. C., 1907.		
Coltrane, W. E., Lucama	....	....
Med. Coll. of Va., 1912.		
Eagles, Chas. S., Saratoga	1909	1909
Univ. of N. C., 1909.		
Harrison, J. S., Elm City	1905	1908
Med. Coll. of Va., 1903.		
Herring, B. S., Wilson	1901	1901
Univ. of Mich., 1900.		
Lamm, I. W., Lucama	1899	1899
Univ. Coll. of Med., Va., 1899.		
Lewis, Geo. Wm., Wilson	1885	1892
Univ. of Md., 1886.		
Moore, C. E., Wilson	1875	1875
Bellevue, N. Y., 1875.		
Moore, E. G., Elm City	1883	1890
Univ. of Md., 1883.		
Moore, K. C., Wilson	1909	1910
Univ. of Mich., 1909.		

Name and Address	*Licensed*	*Joined State Society*
Reed, D. H., Lucama	....	1904
Geo. Washington Univ., 1901.		
Smith, G. W., Black Creek	....	....
Williams, A. F., Wilson	1901	1901
Univ. of Md., 1901.		

YADKIN COUNTY SOCIETY.

President, T. R. Harding, Yadkinville	1885	1906
Phys. & Surgs., Balto., 1885.		
Secretary, S. A. Harding, Yadkinville	....	....
Clingman, J. J., Cana	....	1904
Attended Phys. & Surgs., Balto., 1876.		
Finney, J. R., Boonville	1910	1910
N. C. Med. Coll., 1910.		
Holcomb, C. M., Chestnut Ridge	....	1905
Phys. & Surgs., Balto., 1869.		
Russell, S. L., Yadkinville	1889	1904
Univ. of Tenn., 1892.		
Shore, T. W., Boonville	1899	1904
Univ. of Va., 1898.		

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TRANSACTIONS

OF THE

North Carolina Health Officers' Association

THIRD ANNUAL SESSION

Morehead City, N. C.,
Monday, June 16, 1913

OFFICERS

Dr. L. N. Glenn, *President*, Gastonia.
Dr. G. M. Cooper, *Vice-President*, Clinton.
Dr. W. S. Rankin, *Secretary-Treasurer*, Raleigh.

Executive Committee—Dr. L. N. Glenn, Gastonia; Dr. L. B. McBrayer, Asheville; Dr. J. R. McCracken, Waynesville.

Legislative Committee—Dr. W. A. McPhaul, Lumberton; Dr. D. E. Sevier, Asheville; Dr. H. D. Stewart, Monroe.

Publicity Committee—Dr. W. S. Rankin, Raleigh; Dr. Sam Ellington, Wentworth; Dr. A. B. Croom, Maxton.

PROGRAM

Morning Session, 11 o'clock.

President's Address—Dr. L. N. Glenn, Gastonia, N. C.

Secretary-Treasurer's Report—Dr. W. S. Rankin, Raleigh, N. C.

Important Changes Made in the Public Health Laws by the General Assembly of 1913—Dr. L. B. Evans, Clarkton, N. C.

The Part of the Physician in the Execution of the Vital Statistics Law—Dr. W. M. Jones, Greensboro, N. C.

Of What Value are Reported Cases of Tuberculosis and Typhoid Fever to the Municipal and County Health Officer?—Dr. B. W. Page, Lumberton, N. C.

Medical Inspection of Schools—Dr. Aldert S. Root, Raleigh, N. C.

Appointment of Committees on Nominations and Resolutions.

Afternoon Session, 3 o'clock.

Quarantine, Complete and Partial, and Placarding: To What Diseases Shall These Measures be Applied?—Discussion opened by Dr. W. S. Rankin, State Health Officer, Raleigh, N. C. Continued by Dr. C. S. Maxwell, Beaufort, N. C.; Dr. Joseph Rhem, New Bern, N. C.; Dr. Albert D. Parrott, Kinston, N. C.; Dr. John Blount, Washington, N. C., and Dr. Charles T. Nesbitt, Wilmington, N. C.

After What Diseases, With What, and How Should We Disinfect?—Discussion opened by Mr. Warren H. Booker, assistant to the Secretary of the State Board of Health, Raleigh, N. C. Continued by Dr. C. A. Shore, Raleigh, N. C.; Dr. H. B. Maxwell, Whiteville, N. C.; Dr. William S. Jordan, Fayetteville, N. C.; Dr. J. W. Halford, Lillington, N. C., and Dr. L. B. McBrayer, Asheville, N. C.

How to Handle the Contagions in School Populations—Dr. George M. Cooper, Clinton, N. C.

Report of Committees and Election of Officers for Ensuing Year.

Evening Session, 8 o'clock.

Address by His Excellency Locke Craig, Governor of North Carolina.

The Indications for Combining Municipal and County Health Work—Dr. J. T. J. Battle, Greensboro, N. C.

Fundamental Duties of the Whole-time County and Municipal Health Officers—Dr. Charles O'H. Laughinghouse, Greenville, N. C.

Adjournment.

Fourth annual session will be held in Raleigh, June 15, 1914.

OFFICERS.

Dr. G. M. Cooper, *President*, Clinton.

Dr. William M. Jones, *Vice-President*, Greensboro.

Dr. W. S. Rankin, *Secretary-Treasurer*, Raleigh.

TRANSACTIONS

OF THE

North Carolina Health Officers' Association

THIRD ANNUAL SESSION

ADDRESS OF PRESIDENT, DR. L. N. GLENN.

Fellow Members of the North Carolina Health Officers' Association:

We are here today for the third annual meeting of our organization. This organization was very happy in its first officers. In its infancy it was guided and directed by two of our most capable men and has grown to be of some importance. Perhaps no organization has ever grown quite so rapidly in some respects as this. At Hendersonville a year ago this new organization was turned over to the present officers. The present President wishes to very sincerely offer his thanks for the honor conferred upon him at that time and hopes that the labors indulged in during the past year have not been in vain.

Instead of delivering to you today anything like a formal President's Address, recognizing the fact that this is not strictly speaking a literary body but a working body, I conceived the idea of not writing an address, but I wish to review briefly some of the work done during the past year and make some few impromptu suggestions and recommendations as to our future.

During the past year I have communicated with the State Boards of Health and State Health Officers' Associations of several States of the Union. I have secured, wherever possible, ideas and information from the bodies in the different States as to what they were doing and what they were expecting to do. I find, after having communicated with so many of the health workers, that we constitute a working body—not a theoretical body. We are indulging in practicalities, not theories. We are on the firing line, all of us, and that being so, a simple discussion of conditions as they are, I take to be more in place than any attempt at a literary production.

During the past year we have in my county, if you will pardon an illustration of what we are doing, attempted to educate the school children. If I were to attempt a real address to you today I should speak on the education of the children along health lines and on health matters. In our county we have had the coöperation of the teachers

most cordially. The superintendent of education in our county is one of our greatest helpers. Every schoolhouse in the county has not only been opened to us, but he has begged us and urged us to come whenever we pleased and stay as long as we pleased, to dispense anything we might be able in the way of health education. Not less than ninety-five per cent of the school children in Gaston County during the past year have heard health talks. The physicians of the county have surprisingly well rallied to our assistance. The physicians will assist in the work far better if you get the superintendent of education to make out programs and map out routes for the phyicians. They will work for him better than for you. We have discussed with the school children sanitation, hygiene, ventilation, diet, light, heat, filth, cleanliness. We have discussed vaccination, quarantine, disinfection, fumigation, vermin and things of that sort. We have endeavored in the plainest language possible to educate the children along health lines.

About a week after these talks the teachers in many of our schools have called upon the children to write up the health talks they heard the week before. It is really surprising to see and read the compositions that these children have produced. Surprisingly accurate have they been in what they have learned from these talks and very few of these written productions from the children have been erroneous. It is really remarkable. They have picked up in quite a number of instances very valuable pieces of practical work and taken it home with them and applied it in their homes. Our hardware dealers throughout the county have been flooded with orders this summer for screens for doors and windows more than ever before. The children themselves are looking after sanitary conditions around their homes. The children are keeping cleaner schoolhouses; the country churches are being kept better and cleaner; public meeting places of every kind are better looked after; refuse matter of every description is taken care of better than formerly; nuisances of every kind are being abated more readily than ever before, and this work is bearing far more fruit than it ever did before.

What we have been doing in our county can be easily done in any of your counties and is being done to some extent in some of your counties. The parents of these school children have acquiesced with us in this work to a much greater extent than we anticipated. At the beginning some were rather skeptical, but now we can not do too much. We have been begged and pleaded with for health talks in many instances where we were unable to supply them. We hope by this method to bring up a health loving, health knowing population. The school boys of today will be the voters a few years hence. They will be intelligent

voters so far as health matters are concerned. We will not have to beg legislatures to do things for health. The legislators themselves will know about health matters and do the things that ought to be done better than ever before. Our Legislature at present is doing or has done well by us. They have done better for us each succeeding session than before and we take it that it is largely on account of the enlightenment that we are spreading throughout the State. The school girls of today are soon to be the housekeepers and homebuilders and the children raisers of the future. These girls soon to be women are going to be acquainted with health necessities. They will keep cleaner homes than their mothers, cleaner kitchens than their mothers. The back yards will be cleaner than in former days and in every capacity these girls of today are soon to be our health workers of the future. Looking at it from a purely selfish standpoint, if in no other way, it is a paying investment on our part today. You have all had the experience that I have had. You have all tried to do many things in the home that you failed to get done. You have all met deplorable conditions about homes that we were unable to correct. Why? Because of the ignorance about that home. You have not had the coöperation in your work that you should have had in the past and that you will have in the future. The ignorance of the people in the past has allowed the ignorance on the part of the doctor to go on unquestioned. The enlightenment of the future will smoke out the sorry doctor—no question about it. The enlightened public of the near future will ask you about these matters and will demand answers. They will know whether or not you know, and it is going to be your province to know and your knowing will not be in vain. You will have the coöperation that means success.

A very practical illustration is this: For several years past we have had no screens in our county home. It is a splendid building, but had no screens. Every summer we have had several cases of malaria among these helpless, feeble old people, not sick, except malaria. Three years ago I succeeded in having the county home screened—every window and door. Since that time we have not had a single case of malaria among the twenty-six or twenty-eight inmates. I mention that not because it is necessary to be mentioned but because it has been an object lesson in our county and has been told to the children in our schools. That has been a practical lesson to them that means something to them. The children now know what the fly question means, what the mosquito question means, and you all know that a very, very few years ago even the best of us did not know what these questions meant.

My idea then, in recommending work, is simply this: You county

physicans get the coöperation of your county superintendent of education. If you have him with you you have the best ally you can get. He will gladly invite you to discuss health matters with his teachers at his summer school institutes. There is the place to get in your good work. If you will meet with the teachers and discuss with them what these things mean, what their duty is, what an opportunity they have to coöperate with you, and instruct them so as to enable them to look over their school children and tell what child should not be in school, enable them to employ a certain amount of tact with a certain amount of teaching and get the parents to take that child out of the school, you will be doing the best work possible. We recently had a girl seventeen years of age in one of our schools almost dead with tuberculosis. It caused a great deal of trouble to get that girl out of school, but she was expectorating everywhere, all over the school premises; she was in the classes with other children, using the same pencils and books and tablets as the other children. We almost had to force her out. A few years hence it will not be so. You will not send your boys and girls to a school where that kind of a thing goes on. It is the enlightenment of the public school that I would urge upon you; that I beg with you to coöperate in aiding. When this work is done and you bring up a population knowing these matters, the work from that time on will be very, very easy.

To undertake to accomplish this work without public sentiment, without public enlightenment, is an endless, useless task. Only a few years ago we preached prohibition without effect. We got it in the school books, into the school children, and now we have it in the laws. This is the same way. There has never been in the history of this State a time when public sentiment was more receptive of these measures than now. You have never in your experience as physicians had the opportunity placed directly at your disposal that you have now. The people of the State no longer stand for the things they stood for in the past. Take the prisoners, how they are treated today, compared with years gone by. Not a community in North Carolina will stand for prisoners being imposed upon. The brutality of former years is a thing of the past. The public has been enlightened. The good work is going on, it is bearing fruit, and our future is far brighter than the past. That result will be accomplished so soon as you put forth the proper energies. We are getting along well, but we want to get along faster. You will find that very, very seldom will you have any opposition in this endeavor.

This work, then, to be carried on, merely needs a little effort on your

part, and you will be well repaid and more than repaid for anything you may do. You have the laboratory at Raleigh to assist you whenever that is necessary; you have our excellent State Board of Health, with its excellent officers, to assist you and coöperate with you. You have every coöperative aid that you need, and if you will but do your part in a work that is easily done, for the people, who are anxious to have it done, your reward will be ample and sure.

I thank you very much.

REPORT OF SECRETARY-TREASURER.

W. S. Rankin, M.D., Raleigh, N. C.

As the hour for the meeting has already lapsed by an hour and a half, and as our time is short, I am going to ask the permission of the Association to dispense with the reading of the minutes of the last meeting, which are found on pages 639-642 (inclusive) of the Transactions of 1912, and without objection, I will let those who are interested in the minutes look them up in the Transactions.

As Treasurer I report that we have collected $67 and have $53 in the treasury.

CHANGES IN THE HEALTH LAWS OF NORTH CAROLINA BY THE LEGISLATURE OF 1913.

L. B. Evans, M.D., Clarkton, N. C.

Mr. President and Fellow Members of the North Carolina Health Association:

I shall divide this short paper into three parts:

First. Changes in the General Health Laws.

Second. Changes in the laws affecting health.

Third. Changes in the laws affecting the social, moral and mental hygiene of the State, and therefore indirectly affecting health.

1. *The changes in the General Health Laws of any importance are as follows:*

First. The county boards of health are to meet on the first Monday of July of this year and hereafter in the odd years of the calendar on the second Monday in January, and on these dates elect a county physician or county health officer, who is to replace the old county superintendent of health. Now the reason for this meeting in July of this year

is that on the date the county board of education meets, and as there is a new county school law that has made it possible, by the concurrence of the county board of education and the county board of health, for the county board of education to appropriate from their fund a certain amount, not exceeding one-half the county health officer's salary, for the purpose of having the health officer make physical examination of the school children. Again, the new law makes a distinction between the official employed by the county board of health to simply treat sickness in the county and the official whose principal purpose is preventing sickness. The term "county superintendent of health" is confusing and misleading to the people of the county. As the term has been employed it was officially applied to the physician who treats the sick in jail, in the convict camp, and county home, examiner of the old soldiers for pensions and the insane for commitment. It also applied to the same physician who did those things mentioned, but also spent a larger part of his time in the execution of certain measures for the prevention rather than the cure of disease. The new law does not use the term superintendent of health. It recognizes two terms—"county physician," who simply treats the sick, makes commitments, etc., and "county health officer," who gives his whole time to the prevention of disease. It is up to each county board of health whether they shall employ a "county physician" of a "county health officer," depending on whether the duties of the officer is to simply treat the sick dependent upon the county or the duty of giving his entire time to the prevention of disease in the county.

Again the new law takes the right of inspection of county buildings away from the State and gives it to the counties. It also takes the duties of enforcing quarantine law out of the hands of the State and gives it to the county authorities that now have both the power and the responsibility for the proper enforcement of the laws. This principle is in full accord with the fundamental democratic principle of local self-government. (The right of quarantine in cases of bubonic plague, yellow fever, typhus fever and Asiatic cholera is still retained by the State.)

The last and most important change in the general health laws was to increase the appropriation from $18,000 to $26,500.

2. *Changes in laws affecting the general health:*

Under this head I want to mention two laws passed by the last General Assembly. The first of these is known as the vital statistics act. It requires the registration of all births and deaths in North Carolina. It is generally conceded by those most interested in the health of the State

that this is the most important piece of health legislation that was ever passed by a North Carolina Legislature. This law goes into effect July 1st. It is what is termed the "model" law. It embodies the wisdom and experience of the various registration officials not only of the various States of the Union, but of many of the European countries. It is strict and exacting in requiring all such detailed knowledge and data accompanying a birth or death that could be of interest at any subsequent time, either from a social, legal or health standpoint. All this information is kept on permanent record in fireproof vaults at the State Capitol, and can be obtained at any future time by paying a fee barely sufficient to pay for the clerk or official for finding and copying same. This law is like wine—will become more valuable as time goes on, especially the monthly reports of the number of deaths in each county per one thousand inhabitants. A knowledge of the causes of those deaths will be a wonderful aid to the State Board of Health, doubling and redoubling its usefulness as a life saving station, giving them absolute knowledge of conditions throughout the various counties of the State. There were dozens of amendments offered to the bill and a few of them stuck, still it came through in better shape than some of us expected. The amendment most objected to was the one giving the people in the country districts ten days in which to file death certificates. Delays cause difficulty in obtaining accurate data. An appropriation of $10,000 was made for carrying on this work. The total appropriation made by the Legislature of 1913 for health work was about $45,000 per year as against $27,500 heretofore.

Now the other law enacted is one allowing any district which may so desire to form a health district, petition for an election, vote a tax on themselves to eradicate disease and improve their hygienic conditions. This bill was introduced by myself at the request of our able Secretary of the North Carolina Medical Society, Dr. J. A. Ferrell, who hopes by this means and with special help from the Rockefeller fund to create in this State a few model districts, so far as science can make it so, for perfect, healthful living, let the world know of them and invite the world to come and enjoy the benefits of these perfect districts.

Now a few of the laws that I remember that might be construed as affecting the social and moral hygiene of the State and therefore affecting the health are:

(1). The county school law which allows the county school board to pay half the salary of a physician-officer (county health officer) whose duty it will be to examine all school children.

(2). The search and seizure law.

(3). The child labor law.

(4). The law increasing the appropriation to the various State Hospitals and schools for the afflicted.

(5). Six months school term.

(6). Increased appropriation for providing antitoxin and serum.

(7). Compulsory education.

(8). Encouragement in hookworm work.

(9). Amendments to prison laws (reformatory age at State Prison from 16 to 18).

(10). Additional educational qualifications for applicants for medical license. This law goes into effect in 1917, and requires the applicant to have educational qualifications equal to the requirements for entrance to the University of North Carolina.

The fight for better health conditions has not been won. The fight has only begun, and it is up to us as physicians to do our part in carrying out and making popular these various laws. If we fail in educating the people to the value and benefits of these laws, especially the vital statistics law, there is danger of its becoming unpopular to that extent that a demand might be made for its repeal. The last Legislature did more for health than has been done by any previous General Assembly. Our thanks are due to many friends of health, but I would especially mention Dr. Rankin, who was ever on his job; Dr. Cox, of Pitt; Dr. McMillan, of Robeson; Dr. Gordon and Senator Hobgood, of Guilford. However, the passage of these laws would have been an impossibility but for the education of the people to their needs, largely through the efforts of our able State Board of Health.

THE PART OF THE PHYSICIAN IN THE EXECUTION OF THE VITAL STATISTICS LAW.

William M. Jones, M.D., Health Officer of Guilford County.

From whatever standpoint we consider the question, either singularly as individuals or collectively as a nation, it is but a natural desire that when we shall have departed this life we leave some lasting record or memorial to posterity as to who we were and what we accomplished.

The record of the achievements of a nation is known as the history of that nation or tribe. That a nation may be a nation and make history as such, and have even a meager record of its achievements, the life and habits of the nomad must be dispensed with, they must settle and form a society or government. Consider for only a moment the

life of the American Indian. Christopher Columbus found him here, and no more today do we know his history than did Columbus four hundred and more years ago. The only history of the American Indian, who is in fact the real American, that coming generations will have access to is certainly anything but favorable. It will put the poor red man down as a bloodthirsty savage, and none of his good qualities will be remembered, as none are recorded. The Indian has no record because of no education, and no civilization for the same reason. Education and civilization are copartners, the one presupposes the other. We know that the best educated nations of the past were the highest civilized and consequently the ones that have left to posterity records of their achievements. These records only consider the nation as a whole, and consider not the individual, except when that individual has really been the head and the brains of the nation, as Socrates, Plato, Cicero, Cæsar and some others.

As a nation we also are making history, are leaving monuments that will resist the ravages of time, which future generations will view with pleasure and pride; but only as we look upon the Pyramids of Egypt—and these certainly have resisted the devastation of time since when no man knows. Then that we advance some in our records, and leave to our children lasting memories, it is necessary that we have on perpetual record some history of the individual as a separate and distinct personality, some way by which he may be distinguished from the mass.

There is but one way whereby a record may be had, and our last Legislature has given us the machinery, in the vital statistics law. This protection to human life is no theory, and I would use some illustrations in substantiation would it not be for me to do so an insult to your intelligence. The first and essential obligation of society and the principal reason for society is that it may protect the lives of its individuals from needless suffering and death, and any community, country or government which does less than this fails in its essential nature and purpose as a government. The law is for the people, and not the people for the law. So the law requiring the reporting of births and deaths is for the benefit of the people, not only as a whole but for every individual. The question may be asked, Of what value are such records any way? How can such records help fight disease? etc. The answer is to ask, What value are ledgers to a banker? Can a bank do business or any corporation or company of whatever nature do business without a set of books? Then how do you expect the Health Department to do its work without records?

A record of births and deaths is as essential to effective, intelligent

health work as are a set of books to a company, and in fact the vital statistics is the ledger of the Health Department. Why do you occupy the office you do, and what is expected of you as a health officer? That you maintain a low death rate or reduce a high one; when you have done this you have successfully performed your obligation to your community. This maintaining of a low death rate or reduction of a high one is dependent upon a knowledge of cause, location, and control. These are the essential factors in the conservation of life and protection of health, and the three are absolutely necessary to successful work. The primary factor is the physician, for if he is not always present at the beginning of a life he is generally on hand at or near the time of departure. Upon him rests the responsibility of notifying the proper authorities. The practicing physician, then, is of fundamental importance. He is the sanitary outpost or picket, who informs the Health Department, and through these reports only can the Health Department inaugurate methods and use means to protect the people. To do effective work in conservation of life and protection of health we must have some means of knowing that we are having an inordinately high death rate, for if our rate is normal and is due only to time and consequent wear and tear of the human machine, then we are expending our time, means and energy upon a perfection, and one that cannot be improved. This we know is not a fact, for we are constantly being brought face to face with deaths of babes, youths and maidens of tender years, and man in the prime of life, and by these we know for a certainty that there is an ample field for work. Knowing, then, that we are having deaths from preventable diseases, we must know what disease or diseases are producing these unnecessary deaths. When this is known, it is absolutely imperative that we know the location. If in a city, what locality, and so with the county and State.

This information we must have from the outside, and one does not have to ask to know who and who only can give this information fully and intelligently. So we do not have to have statistics to inform us of the fact that we are having many deaths that we should not have, many long and anxious hours of waiting by sickbeds of friends or relatives, due to some local conditions that might be remedied, or coming as an epidemic and carrying many away and handicapping others for life. Statistics are necessary to know what the disease is that is causing a high mortality, and where most prevalent, and who but the physicians can give you this information? No one, absolutely none. In a city where a burial permit is absolutely necessary, you might know only that a death had occurred, and where, but by what means you would not know unless

a physician had signed the certificate. He is the only man who can correctly supply this information.

The physicians have ever been prime movers in health work, and from the great majority the State is going to have no trouble in getting reports promptly and accurately filled out. Some are not going to report as they should, and these will have to be forced to do so, by a process of law if necessary. This, however, should not be the case, for the State has granted a license to each physician and has required him to pass a satisfactory examination before a competent body of physicians, and this license is granted that the people might be protected from incompetent and irresponsible men. The physician holding a license does so from the fact that he was adjudged competent. The State protects him, and it is nothing but right that he should give value received and help protect the State. There are few things that a physician could be guilty of that are fraught with so much danger and possess so great a possibility for harm to so many people as a failure to report births and deaths. The physician who willfully violates the law of vital statistics, and fails to make his report promptly and correctly, is not a proper man to hold a license in North Carolina, and some States specify that when a physician violates this law he shall have his license revoked and be subject to a fine or imprisonment in addition. The State is depending upon the physicians to furnish her this information, and it is incumbent upon them that they furnish it promptly and accurately. This is the best possible service that a physician can render his State, and how you report or do not report will be known by future generations for all ages, and upon your acts must and will rest the censure or praise of your children and their neighbors.

If you start right, the future generations of physicians will also keep an accurate account. This is so very necessary that each and every man should take a personal interest. It is no reflection upon your ability that you have many deaths to report, and if these are from one cause, by reporting you may be helped very materially, and help your community in turn. Your neighbor may be having a high mortality from the same cause, and by reporting these vital phenomena, the cause and location can be obtained and measures for control instituted. You can easily see what you have been instrumental in accomplishing when you are able to prevent one death or one case of typhoid fever.

When you insure your house against fire, the company puts a certain per cent on, according to the risk in the neighborhood. If it is good, the risk is low, and, if it is bad, is high. So with human life, and we cannot afford to risk our life—the only one we have—in a neighborhood

where the risk is bad. However, in neighborhoods where the risk is bad, we can change it to a good risk by preventive means. In fire insurance a factory or warehouse may be in a neighborhood where the rate is high, but by installing a sprinkler system as a means of prevention, the risk is very materially lowered. It is entirely unnecessary for me to go further into this matter, and suffice it to say that vital statistics are the most important of all statistics, as they deal with births and deaths of the community, and that to be of value they must be accurate. The physicians, then, are the men and the only men who can furnish them accurately, and we are confident that in a very few years North Carolina will have such an array of statistics as she may well be proud of. She then can tell just what she is getting for her money that is expended for disease prevention and health conservation.

OF WHAT VALUE ARE REPORTED CASES OF TUBERCULOSIS AND TYPHOID FEVER TO THE MUNICIPAL AND COUNTY HEALTH OFFICERS?

B. W. Page, A.B., M.D., Lumberton, N. C.

The chief aim of a municipal or county health officer is the prevention of disease. With this aim ever before him, his success with tuberculosis and typhoid fever will depend largely upon the extent to which the occurrence of cases of these diseases is reported to him. This is the primary factor in preventing the spread of all communicable diseases. A knowledge of the occurrence and location of each case constitutes a focus from which effective preventive measures can be pursued. Without this knowledge no sanitary measure can be more than partially successful. Knowing the location, a knowledge of the causes is usually obtained by diligent research.

In the case of tuberculosis, the source of infection is often vague if it follows an acute disease that has greatly lowered the vitality of the individual, but in the majority of instances the disease seems to be contracted through direct or indirect contact with another patient. This applies especially to colored people, who spend so much time with the sick. We know that tuberculosis is spread from infected persons, principally by the "droplet method," which requires close proximity on the part of the victim, or by means of particles of dried, infected sputum gaining access to the mucous membrane of the mouth or throat of the susceptible individual.

In the case of typhoid fever, a knowledge of its occurrence is necessary

to discover contaminated wells, to locate milk outbreaks, and to prevent the spread of the disease by flies and by contact. After locating the source of infection, typhobacteria can be administered to those exposed, and by instituting proper sanitary methods the spread of the disease checked.

Although the greatest value of the reports of these diseases is the information they furnish for those directly exposed, this constitutes only a part of their usefulness. The occurrence of the disease in one section has an important bearing on the welfare of every other section of the city or county and it is of value that each community should be kept currently informed of the existing prevalence of these diseases in every other community within the county. Reports of the occurrence of these diseases are the only means by which the health officer can keep informed of their prevalence throughout his jurisdiction.

Following the notification of each case, it becomes the duty of the health officer to inaugurate such measures and insist on such precautions as will protect other members of the community from exposure to the disease or from being affected by the same morbid conditions. Any health officer who does not make use of notifications cannot expect the sincere coöperation of the attending physician.

In conclusion, we may say that the value of reported cases of tuberculosis and typhoid fever to the health officer is simply to furnish him the data for applying the remedy, which lies not so much in drastic laws but in a policy which shall aim at informing the public as rapidly as possible of the basic principles of preventive medicine.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Aldert S. Root, M.D., Raleigh, N. C.

Gentlemen: I am glad to have the opportunity of discussing with you this afternoon Medical Inspection of School Children, a movement which shows more altruistic forethought than any measure that I know of which touches upon the progress of our civilization.

This is essentially an age of preventive medicine. Never before in all history has such attention been concentrated upon the prophylaxis of disease in every part of the civilized world. We, as physicians, are beginning to realize that our mission is as much to maintain the health of our patients as it is to heal their ills and relieve their sufferings. The oft repeated, time tattered platitude, "An ounce of prevention is worth a pound of cure," has never been so thoroughly realized. The various

State Boards of Health throughout the country have taken the initiative and, activated by their efforts, the State Legislatures are making possible by laws the location and cause of diseased communities.

City sanitation is developing. Municipalities are compelled to observe greater cleanliness in their milk and water supplies, in the method of handling meat, in removing the lurking and breeding places of bacteria. In the realm of scientific medicine the same attitude is taken. We are *preventing* typhoid by vaccination. We have compulsory vaccination laws for smallpox; we are immunizing against diphtheria and tetanus by serumtherapy and are preventing rabies by means of the specific emulsion.

It seems especially fitting, therefore, at this particular time, that we should consider the practical question of maintaining the physical standard of our school children by relieving such physical defects as they may be suffering from. It is my hope that medical inspection in the schools may become a general movement in this State and that all of our large cities will sooner or later make plans for storing up treasures in the health of their public school children.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Introductory:

In the preparation of this paper I have based my remarks upon the results of study of "backward children"—a research supported by the Russell Sage Foundation and conducted by Drs. Gulick and Ayers, New York; upon the observation of Dr. Cornell, in Philadelphia schools, and upon the results which we have obtained to date from medical inspection of the public school children in the Raleigh township.

Historical:

Medical inspection of schools is a movement of recent growth, although it is by no means in its infancy and has long since passed its experimental stage. In France the law of 1833 charged the school committees of the cities and towns with the care of keeping schoolhouses clean. In 1879 the General Council of the Department of the Seine voted to organize a medical service in the schools, and passed an appropriation for the payment of salaries to the physicians.

The first system of medical inspection, in the full modern sense of the term, was that inaugurated in Brussels in Belgium in 1874. So successful was the work that many other cities in Belgium soon adopted the same plan. In Gemany, Leipsic and Dresden were the first cities to have medical inspection—1889. In 1898 the Weisbaden method was generally adopted throughout Germany. This system provides for a

complete physical examination of the child on admission, and a reëxamination in the third, fifth, and eighth years.

In Hungary, medical inspection had its birth in 1887; in Norway in 1899; in Sweden in 1878; in Roumania in 1899; in Moscow in 1888. In Switzerland it has become a national movement. In England the medical inspection act, which went into effect January 1, 1908, is national in its scope and applies to all public elementary schools. In Japan, in 1898, the Minister of Education directed the nomination of salaried school physicians in all public schools.

The first regular system of medical inspection in the United States was adopted in Boston in 1894. In 1897 the New York Board of Health appointed one hundred and thirty-four medical inspectors. In 1895 Chicago, and in 1898 Philadelphia inaugurated medical inspection. In 1911 an attempt was made to determine the scope of medical inspection in the United States. Out of 1,285 cities in this country having organized graded schools, 758 reported. Of these, about 45% have some sort of organized system of medical inspection.

Development of medical inspection:

We have to go back in our American history but a trifle over a century to discover that we were a set of rural communities, the urban population at that time constituting but 3.3% of the total population. Now we are an urban nation: 33% live in cities. This movement of population towards centers has rendered essential attention by the communities to the cleanliness of water supply, to sewerage, street cleaning, problems of light and air in dwellings, the isolation of contagious diseases and a thousand other matters which, in a rural community, were important to individual families only.

Our school systems have developed enormously during this period. The school year lasts for nine months. Compulsory education is, in many cases, overrunning the schoolhouse facilities and hence there exists a close, intimate mingling of children from all families. With the advance of civilization there has been a proportionate advance in the school standards, and the curriculum today taxes the energy of the child as never before. With the increasing congestion of population we are losing sight of our school playgrounds, and the active outdoor games of a decade ago are rapidly becoming obsolete. This change from rural conditions, where man made his living largely by the "sweat of his brow" and muscular activity, to conditions of the city, where man's intellect, and not physical powers, determine so largely his success, means that the existing educational agencies must ally themselves with expert medi-

cal officers, who shall see that the health of the children is conserved through the schools.

Scope of medical inspection:

Theoretically a complete physical examination should be made of each child in the schools. Public opinion, however, will not permit this to be done, since it necessitates removing the clothes, and hence examination of the heart and lungs is not undertaken unless something abnormal with these organs is suspected.

As it is carried out in most cities (Raleigh included) medical inspection comprises examination for defective vision, enlarged tonsils and adenoids, defective hearing, decayed teeth, nervous disorders, skin, glandular and orthopedic defects, contagious diseases, nonvaccination.

As to defective vision:

You are aware, no doubt, that there are thousands and thousands of children in the public schools of America who are beginning life handicapped by serious eye defects, and who are held back in their courses and relegated again and again to the grade below the one in which they should logically stand, on this account. Practically *all* of these children can be relieved by the cost of a few paltry dollars for glasses and many could, by wearing them a few years, discard them for good. On the other hand, with the increased effort of the child to forge ahead with his class, a vicious cycle is created, for the eyestrain grows worse in proportion to the work done.

Twenty-five to twenty-eight per cent of all school children in America have defective vision. Think of what a financial loss to the parents, of what a mammoth economic loss to the nation, this constant repeating of courses means—to say nothing of the physical discomforts and actual physical and psychical suffering these children undergo.

Nasal obstruction:

In no better plight are those children who are suffering from nasal obstruction—more frequently due to adenoid growth than to any other cause; frequently due to enlarged tonsils associated with adenoids, or enlarged tonsils by themselves. You all know what the resultant effects of this clogging up of the air passages are. The child is a mouth breather, usually snores at night; has chronic catarrh, and he will tell you that he catches cold with the greatest ease. His general appearance is dull and apathetic on account of depressed mental activity due to lack of air. The bridge of the nose seems swollen; the upper jaw is poorly developed; there is a chronic inflammation of the throat which not infrequently extends to the ear, causing deafness. The voice is of a

characteristic "wooden" quality. The letters "m" and "n" become "eb" and "ed."

Inspection of a group of children suffering from adenoids shows many of them to have stoop shoulders and flat chests, which clearly predispose tuberculosis. The nutrition is usually poor, for the digestion is impaired by swallowing the catarrhal mucus. Scholarship is markedly lowered.

The prevalence of nasal obstruction among the dullards of school has been shown by Dr. Connell in a series of investigations, to be between 28 and 31%. The sufferer neglects his studies; the schoolroom is a chamber of horrors and the charms which life should hold for him have completely faded away. And yet, 12 to 24% of American children are in this plight. After removal of this obstruction to breathing, about two-thirds of the children show a marked improvement, both mentally and physically.

Defective hearing:

Two to five per cent of school children at large have impaired hearing. As was noted, adenoids and enlarged tonsils are most frequently responsible for this. It is obvious why such children should be "backward" and, too, why the teacher, in the conscientious performance of her duties, should so frequently visit unjust punishment upon them for apparent inattention and indifference.

Decayed teeth:

From 10 to 75% (increasing with age) of the public school children have decayed teeth. There is no more effective way of producing a poorly nourished child than by neglecting the teeth, for the products of decay, constantly being swallowed, act as so much poison to the system, destroying the red blood cells of the body; and in addition the food, improperly masticated, is not penetrated by the digestive fluids—hence the child's nutrition is not kept up to the normal mark. Our records show a vast majority of poorly nourished children to have decayed teeth. I believe that they are more the *cause* than the *result* of the poor nutrition.

Nervous disorders:

Nervous disorders are noted in the medical inspection. Not infrequently an apparently unruly child will be found to have "St. Vitus' dance." Habit spasm is not uncommon in school children. Epilepsy is sometimes met with. Nervous children without definite disease should be watched and overstrain avoided.

Orthopedic defects:

Orthopedic defects, *i.e.*, stoop shoulders, spinal curvature, and skeleton deformities from any cause, should be recorded and the proper system of exercise prescribed for them in the school. Perhaps the seats are too low or the desks too high. About 3 to 10% of school children have some sort of orthopedic defect.

Contagious diseases:

Public schools are a public trust. When a parent delivers his child to their care, he has a right to insist that the child under the supervision of the school authorities shall be safe from harm. Therefore, such diseases as are of a contagious nature should be detected and segregated, for the protection of the other children. Wherever medical inspection has been inaugurated and conscientiously carried out, epidemics have been checked or avoided.

Causes for exclusion from school are usually for the following diseases:

(1) Diphtheria,
(2) Scarlet fever,
(3) Tonsilitis,
(4) Acute sore throat,
(5) Measles,
(6) German measles,
(7) Chicken pox,
(8) Mumps,
(9) Whooping cough,
(10) Pediculosis (head lice),
(11) Ringworm,
(12) Impetigo,
(13) Scabies (itch),
(14) Nonvaccination.

School hygiene:

Nor does medical inspection stop here. School hygiene is a very essential factor for the development of the child. The questions of school ventilation, school furniture, lighting and cleaning, are of paramount importance. An enthusiastic teacher, deeply interested in imparting knowledge, is too prone to overlook the fact that the windows are all closed, that the room temperature has become too high and that the air has become stale and stuffy. Perhaps the schoolrooms are not always aired at the recess hour. Too often the janitor has failed to sweep away the germ laden dust.

In consideration of what I have said—and as a recapitulation—the specific objects of medical inspection are:

1. The detection and correction of physical defects.
2. The detection and exclusion of cases of contagious diseases.
3. The maintenance of good hygienic conditions in school.
4. The correlation of medicine and pedagogy in order to produce the maximum of efficiency in the school system consistent with the preservation of health.

Practical consideration of medical inspection of school children:

Wherever a new movement is instituted, and especially one which touches upon a thing so vital to the parents as their own child's comforts or discomforts, it is to be expected that there will be some questioning, some objections, some obstacles in the way of the movement. Hence, embodying medical inspection into the school plan will necessitate an educational campaign of greater or less degree, wherever it is inaugurated. I well remember the groups of indignant mothers who used to assail me each morning when I reached the school, each one whetting her wrath against the others'. When they would find that the horrors of the examinations to which their children had been subjected were fabrics of the latters' imagination, and that they had suffered practically no inconvenience, much less harm, from being examined, they would at once realize the true significance of the work and lend their coöperation.

Given tact in dealing with the child and with the child's parents, absolute fairness and squareness in dealing with the child's family physician, and the coöperation of the school board, and you have the immediate requisites for the medical inspection of school children.

And let me emphasize the necessity of the local physicians coöperating with the medical inspector, for unless this relation exists you need not expect results. In order to establish this the school physician must be constantly on his guard lest he infringe upon the rights of the family doctor. It should be an absolute rule, stipulated by the Board of Education, that the medical inspector shall treat none of the children for the defects he may find in the school examination, unless he be their family physician. Where physical defects are found a notice is sent to the parents of the child requesting them to call in their family doctor for advice, and at the same time a notice is sent to the family physician apprising him of such defects. In this way the most cordial relations are made to exist and all work for the mutual benefit of the child.

RESULTS OF MEDICAL INSPECTION IN THE RALEIGH SCHOOLS: PHYSICAL DEFECTS FOUND.

The present year began its school session in Raleigh with the introduction of medical inspection. This is the first and only system in the State, so far as I know, which has adopted it. While it is too early to anticipate the practical results, I feel that we have accomplished something already.

We have seen to it that practically every child in the Raleigh schools

has been vaccinated, either by the family physician or the medical inspector. I have personally vaccinated over 800 since the beginning of the school year.

Exclusive of measles and German measles, 132 cases of contagious diseases have been excluded from the schools. In the case of the two former dieases, the epidemics were so widespread and the number of children suspected of having these diseases so numerous, that an accurate estimate of those excluded could not be kept.

90 cases of pediculosis capitis were excluded,
9 cases of impetigo contagiosa,
6 cases of whooping cough,
7 cases of chicken pox,
3 cases of discharging ears,
2 cases of acute tonsilitis,
2 cases of ringworm,
3 cases of scabies,
5 cases of acute sore throat,
2 cases of boils,
3 cases of pink eye,
12 cases of hookworm disease were detected and treated.

Physical examinations of 1,909 children were made, 1,332 white and 577 negroes—in eleven schools. In this connection the results are interesting, as seen from the following comparative statistics.

	Average weights for Raleigh school children.		*Average Weights for American school children (based on weights of 64,000 children).*
For 8 years	55.29 lbs.	(87 examined)	53.59 lbs.
9 years	61.58 lbs.	(181 examined)	58.50 lbs.
10 years	66.43 lbs.	(234 examined)	64.50 lbs.
11 years	75.81 lbs.	(257 examined)	70.06 lbs.
12 years	81.80 lbs.	(266 examined)	77.72 lbs.
13 years	90.40 lbs.	(259 examined)	86.66 lbs.
14 years	102.64 lbs.	(185 examined)	96.66 lbs.
15 years	111.81 lbs.	(189 examined)	107.00 lbs.
16 years	126.16 lbs.	(131 examined)	116.55 lbs.
17 years	127.48 lbs.	(62 examined)	
18 years	124.51 lbs.	(21 examined)	
19 years	123.85 lbs.	(7 examined)	
20 years	114.67 lbs.	(2 examined)	

	Average heights of Raleigh children. (1 inch deducted for shoes.)	*Average heights of 64,000 American school children.*
For 8 years	49.36 inches	48.11 inches
9 years	51.36 inches	49.85 inches
10 years	53.26 inches	51.99 inches
11 years	55.42 inches	53.90 inches
12 years	57.35 inches	56.47 inches
13 years	59.70 inches	58.41 inches
14 years	60.97 inches	60.70 inches
15 years	62.66 inches	62.17 inches
16 years	64.09 inches	63.15 inches
17 years	64.01 inches	
18 years	64.76 inches	
19 years	65.42 inches	
20 years	63.42 inches	

Average weigh's of white and negro children compared:

	White.	*No. Examined.*	*Negro.*	*No. Examined.*
For 8 years	55.29 lbs.	82	62.80 lbs.	5
9 years	61.39 lbs.	160	63.50 lbs.	21
10 years	64.95 lbs.	176	70.93 lbs.	58
11 years	74.92 lbs.	177	77.65 lbs.	80
12 years	80.42 lbs.	172	84.34 lbs.	94
13 years	88.21 lbs.	158	93.80 lbs.	101
14 years	102.44 lbs.	103	102.77 lbs.	82
15 years	109.84 lbs.	101	114.20 lbs.	88
16 years	122.48 lbs.	100	121.11 lbs.	31

Average heights of white and negro children compared:

	White.	*No. Examined.*	*Negro.*	*No. Examined.*
For 8 years	49.35 inches	82	52.55 inches	5
9 years	51.14 inches	160	53.04 inches	21
10 years	53.00 inches	176	54.06 inches	58
11 years	55.32 inches	177	55.50 inches	80
12 years	57.47 inches	172	60.62 inches	94
13 years	59.48 inches	158	61.76 inches	101
14 years	61.16 inches	103	62.63 inches	82
15 years	63.44 inches	101	61.14 inches	88
16 years	64.39 inches	100	60.02 inches	31

Defective vision:

Average for American school child 25-28%
Average for Raleigh schools 23.8%
Among white children 22.6%
Among negro children 25.1%

Nasal Obstruction:

Due to *enlarged tonsils* and *adenoids:*

Average in Raleigh schools 8%
Among white children 8.7%
Among negro children 6.5%

Due to *enlarged tonsils:*

Average in Raleigh schools	5.9%	
Among white children		4.8%
Among negro children		8.5%

Due to *adenoids:*

Average in Raleigh schools	7.5%	
Among white children		7.5%
Among negro children		7.6%

Nasal obstruction, all causes:

Average for American school child	12-24%	
Average for Raleigh school child	21.4%	
Among white children		21%
Among negro children		22%

Defective hearing:

Average for American school child	2-5%	
Average for Raleigh school child	4.4%	
Among white children		5.4%
Among negro children		2.0%

Decayed Teeth:

Average for American school child	about 50%	
Average for Raleigh school child	47.7%	
Among white children		48.5%
Among negro children		45.7%

Nervous Children:

Average for American school child	5-20%	
Average for Raleigh school child	12.1%	
Among white children		12.4%
Among negro children		12.1%

Orthopedic Defects (stoop shoulders, spinal curvature, etc.):

Average for American school child	1-20%	
Average for Raleigh school child	4.7%	
Among white children		4.2%
Among negro children		5.9%

Nutrition:

Good in Raleigh schools	71.1%	
Fair in Raleigh schools	21.9%	
Poor in Raleigh schools	7.0%	
Impaired nutrition among white children		29.8%
Impaired nutrition among negro children		30.1%

About 50% of retarded children were found to have physical defects.

I regret that I cannot at the present time tell you how far the parents have complied with the requests to have their children treated. I can only give you an idea by the hurried cursory investigation which was made several weeks before the closing of the schools: 155 children

had had their teeth worked upon; 40 their vision corrected by glasses; 26 were operated upon for enlarged tonsils or adenoids or both; 9 had received treatment for defective hearing. In other words, 230 children had had their defects treated.

There are others who have reaped the benefit of the school examination and many parents are deferring treatment for their children until the ensuing summer. The epidemic of measles, which was so widespread in this city from January to the close of the schools, was a serious obstacle to this work of reparation.

DISCUSSION.

Dr. Albert Anderson: I don't want to discuss this paper, but I want to emphasize Dr. Root's favorable work at Raleigh during the year. I believe the school board has taken a very important step in securing his services and I hope that other towns will follow in Raleigh's footsteps. I believe this work will obtain better health results than in any other way. I believe that other towns will notice this work of Dr. Root. In carrying out medical inspection it is an education along preventive lines. I think we ought to lay much stress upon this work.

Dr. C. W. Stiles: Wilmington has instituted school inspection. There are some methods used by Wilmington that are slightly different from those in Raleigh. In Wilmington the parents are invited to be present at the inspection of their children, and the boys are stripped to the waist; the girls are stripped to their underclothing to the waist. The inspection is a very rigid one and involves a study of each child, lasting from three to five hours. In addition to a physical examination there is also a mental inspection. This is made by a physician who has had long experience as a school teacher and six years training as a psychiatrist. Dr. Thomas has convinced me that any medical inspection should be combined, if possible, with a mental examination. The two examinations together can have much better results than the two alone. There is no trouble in Wilmington in getting the children to be inspected. The policy was adopted of presenting the matter to the Woman's Club and to the Chamber of Commerce, and getting their coöperation, and the members of these two organizations started the fashion by sending in their children first, and the children came in more rapidly than they could be taken care of. This inspection will extend through the summer months, independent of the schools. A full schedule is kept of every examination and the family physician, at the request of the parents, has access to that schedule, which gives the full and complete

examination. The conditions under which the inspection has started in Wilmington are most favorable.

In addition to this medical inspection and the mental inspection a study will be made of the surrounding sanitary conditions under which the child is living. It is hoped that the inspection at Wilmington will be as exact as ever undertaken. Some of us interested in Southern conditions believe that medical inspection of the public schools represents one of the most important public health problems of the South, and an effort will be made in the near future to extend the general inspection throughout the South. I will say here by way of parenthesis that nearly all the inspection going on today is based upon European or Northern principles of inspection. In the South the problems are slightly different and I think it in the interest of the entire South to bring our results together as a basis for the problems that the other Southern States will have to solve.

Dr. R. H. Lewis, of Raleigh: I want to say that the committee is very much pleased with Dr. Root's work in Raleigh, and showed their appreciation by unanimously and cordially reëlecting him.

QUARANTINE, COMPLETE AND PARTIAL, AND PLACARDING: TO WHAT DISEASES SHALL THESE MEASURES BE APPLIED?

Discussion Opened by W. S. Rankin, M.D., Raleigh, N. C.

I think I have won the reputation in the past of taking a rather radical position on quarantine matters, and I am here to assure you that I shall sustain my reputation now in that particular respect.

In opening this discussion on quarantine, which is today practically confined to four common diseases—measles, whooping cough, scarlet fever, and diphtheria—I should like to discuss the question under three headings: First, the ineffectiveness of quarantine; second, the explanation of this ineffectiveness; and third, I wish to suggest certain ways to make quarantine more effective.

Now, when this question of preventive medicine began to absorb our attention, it was almost our unanimous opinion that the most preventable of all diseases, and the ones that we would "stamp out" most easily, to use an old familiar term, were the four diseases that I have mentioned. We thought that they were, of all diseases, the most easily preventable, and we would demonstrate to the people what could be done by reducing the mortality from these diseases—the number of

deaths per thousand per year. I am here to say that during the last twenty-five years we have barely touched the mortality of any of them by our quarantine and disinfection. The only one of the four diseases that has been decreased in its mortality—the number of deaths per year per thousand of the population—since 1890, is diphtheria, and that is due to antitoxin, not to quarantine and disinfection.

Now, let us look at the facts. Take measles: In 1890—that is as far back as I could go with the census reports in my office—in 1890 the mortality from measles was 13.5 per 100,000 of the population. In 1900, ten years later, the mortality from measles had dropped just one point, to 12.5 per 100,000 of the population. I have here before me the mortality rates for the next ten years, and I see that in 1904 the mortality was up to 11.0; in 1906 it was 12.1; in 1910 it was 12.3. So we have to our credit, as preachers of preventive medicine, a reduction in the mortality of measles, according to the census reports of the United States, of from 15.5 to 12.3. Anything in prevention there?

Now, let's take some more. The mortality from scarlet fever in 1890 was 13.6 per 100,000, in 1900 10.2, and in 1910 it was 11.6. Have we done anything with that, more than to barely touch it?

Take whooping cough. In 1890 the mortality was 15.8, in 1900 it was 12.1, in 1910 it was 11.4. If you will take the yearly mortality between 1900 and 1910 you will see that the fluctuations are just like the fluctuations on fever charts. The mortality of whooping cough in 1906 was 15.1, just about what it was in 1890.

What do these facts prove? It appears that so far as these three contagious diseases are concerned, we have made no headway either in prevention or in treatment. We have practically the same mortality.

Now, if we take diphtheria, you will see that there has been a tremendous decline. The decrease in the mortality of diphtheria amounts in absolute figures to 55,000 deaths a year less than we would be having in the United States if we had the same mortality in diphtheria that prevailed formerly. The mortality in 1890 was 97.8; in 1900, four years after the introduction of antitoxin, it dropped to 43; in 1910 we got it down to 21.4, where it is now, fluctuating around 20.

So you see that our quarantine and disinfection have not "stamped out" these diseases that appeared in the beginning so easy of extermination. Moreover, if you will take what I regard, and what those to whom I have talked about this subject regard as the greatest book on the prevention of disease, "Sources and Modes of Infection," by Chapin, you will see that the author states that he has examined the mortality rates from these diseases in cities where they quarantine measles and

cities where they do not quarantine measles, in cities where they disinfect after scarlet fever and in cities where they do not disinfect after scarlet fever, that is in cities where quarantine is rigid and in cities where quarantine is lax, and he finds the mortality rates practically the same. That is a poor showing for prevention, isn't it?

That is the first point I want to make. I will start out with something discouraging and try to build up. I will not go into any further details on that point—that our quarantine and disinfection have been futile.

What is the explanation? Why, the explanation is that until a few years ago we misunderstood the fundamental thing in handling these diseases, *i.e.*, the nature of the contagion. The discovery of the mosquito as the carrier of the disease that we used to think was airborne, that disease we used to think could be carried by a letter from New Orleans to New York, unless the letter was disinfected—the discovery that the mosquito and the mosquito alone carried that disease, yellow fever, confirming a parallel discovery of a few years before in regard to malaria, made the people think more of intermediate hosts and less of air infection.

Dr. Doty, the recent health officer of New York, has done something that would appear to some of you as almost criminal. Doty says that in handling smallpox and typhus fever, two diseases that were thought to be airborne, and two of the most contagious of contagious diseases—in handling these diseases in 1900, when he had some 840 cases of the two diseases and some fifty attendants, he never required those attendants to put on white suits when visiting the patients. That was in New York, and no cases of secondary infection occurred in the families of the attendants. The old idea of air infection is something that is passing, and passing rapidly.

In the hospitals of Paris they started out a few years ago to put cases of whooping cough, measles and scarlet fever all in the same ward. They got no cross infections. They did put in partitions at first, glass partitions such as you see in offices, that did not touch the walls. I believe that was in the Pastuer hospital. After that worked very well they took down the partitions and put up screens, ordinary cloth screens, and I believe now they have done away with the screens. They have had no cross infections. They have done the same thing in England.

These diseases are not airborne. We have concentrated our fire upon the idea that they were all these twenty years, and we have accomplished nothing. These diseases are not carried by fomites. What is the explanation of our failure? How are these diseases carried? We have

misunderstood the nature of the contagion. We found that there was a carrier for malaria, for yellow fever, and for typhoid fever in numerous cases. There are a lot of cases of typhoid that never even go to bed. I have heard Dr. Osler say he believed there were cases of typhoid fever that never went to bed. He believed it was possible for people to have typhoid fever and never think themselves sick, much less call in a physician. I remember one case of a nurse who was in bed only two days from typhoid fever. Her symptoms were so slight that one of the most positive Widals I ever saw was questioned. The only way in which we did find that she had typhoid fever was that the typhoid bacillus was cultivated from her intestine. There are many cases of typhoid carriers.

It is perfectly reasonable to discard the old idea of air infection and to recognize the man himself, the person with the germs, as the principal means of spreading the disease.

Take the case of measles and scarlet fever. Anderson and Goldsberger have shown that you can convey measles from person to person by taking the blood of a patient with measles and injecting it into another person. You can take the blood of a patient who has measles and inject into a monkey, and then transmit the disease from monkey to monkey. This is a germ that is such an obligate parasite, that has lived so long in human tissues, that you cannot grow it in any kind of media. Is it reasonable to think that this germ, which you cannot cultivate in blood serum, or in cultures that approximate, as nearly as we can approximate, human tissues—is it reasonable to suppose that this germ will live in an old dry scale for three weeks or longer? That it is going to live in a dry place, or in the sunshine? It is not reasonable. The same thing is true, probably, of scarlet fever. The germ that probably produces scarlet fever has not been cultivated outside of the human body, and is it reasonable to suppose that this germ, probably so fixed in its habitat, will live on this floor in a dry scale indefinitely?

Now, we know, and I think the evidence will prove to the unbiased, open mind, that these four diseases are carried principally by unrecognized or missed cases, by atypical cases, and by carriers. Anderson and Goldsberger have shown that you can take the secretion from the nose and mouth of a case of measles for the first forty-eight hours, before the eruption begins, and reproduce the disease in monkeys. After forty-eight hours you cannot do that. The infective agent does not live very long. They found that you can take the blood of a patient, if you take it twenty-four hours after the eruption, and reproduce the disease in monkeys, but you cannot do it twenty-four hours after the eruption

has appeared. They found, and I think all the men who are doing the research work on this disease find that the most infective period is the first four days, when nobody can recognize it, unless there is an epidemic, and then the physician would not suspect it. You have a job to quarantine measles. It is spread before you can recognize it. What are you going to do about that?

Dr. Chapin, who in my opinion is the most exact health officer in this country, says that you can prevent, even when you have the strictest quarantine, only from seven to fifteen per cent of the cases of measles that occur in an ordinary epidemic. What are you going to do with measles? Is not the carrier, the child we have ignored, is not it the sufficient explanation of the failure to reduce the mortality of this disease?

Take whooping cough, another disease like measles in the way it is carried. You cannot recognize a case until it whoops, two weeks after the disease begins. The organism that produces whooping cough is most abundant in the nasal and mouth secretions before the whooping begins. That stage lasts, instead of four days, as in the case of measles, for two weeks.

I might mention here, in talking about mouth and nose secretions, that this experiment has been done: A bacteriologist has gone into a room fifty feet long (I don't know how wide or how high), has exposed plates to the air and found that there was no *B. Prodigiosi* (germs) in the room, that the air was free from them. Then he sprayed his nose and throat with a normal salt solution containing a culture of *B. Prodigiosi,* and going back into the room, placed his plates around the room, on the mantel, etc. Then he went into one corner of the room and sneezed and coughed. After six hours he put those plates into an incubator and got colonies of *B. Prodigiosi.* This experiment shows that when you or I sneeze or cough we expel particles of mucus, secretions from our nose and throat, with such force that we throw them fifty feet. This bacteriologist has shown that he could spit fifty feet, and that he could spit in such finely divided particles that they will remain floating in the atmosphere for six hours.

What will you do when a child has whooping cough and, before it is recognized, goes to school, gives one hard cough, and sprays the whole crowd? It is a pretty hard proposition.

Now, mind, these two diseases—measles and whooping cough—spread before they are recognizable by anyone. Take scarlet fever. Scarlet fever is most contagious at the height of the eruption. Now, there have been epidemics of scarlet fever that have been closely examined, and

what has been found? It has been found that where there is one case of scarlet fever that is recognizable, where there is one case in bed, there are three or four cases walking around the streets, atypical cases, missed cases.

I should like to read you just a paragraph from this book I swear by, Chapin on "Sources and Modes of Infection," on the missed cases, the atypical cases of scarlet fever:

"*Atypical Scarlet Fever*: As the bacteriologist cannot help us, we have to rely on clinical evidence, which is much more uncertain and difficult to secure. The layman and the inexperienced physician are apt to scoff at the suggestion of scarlet fever unless the patient has a high fever and is as red as a lobster. But all who have seen much of this disease know that it is exceedingly common to see cases with a scarcely discernible indefinite rash lasting for only a few hours, a rise in temperature of only a degree or two lasting also only a few hours, and the merest trace of sore throat. Sometimes the rash may be entirely absent and even the fever may escape the most careful observation. In institutions and families such cases, considered doubtful at first, or perhaps entirely neglected, prove to be the origin of typical symptoms in others. Every health officer will recall many such cases. They are the missed cases which are such a factor in the maintenance of this disease. There are many references to them in the reports of health officers and in medical literature. Among others who report such atypical cases are Newsholme, Caziot, Welch and Schamberg, Cameron, Butler, Lesarge, Thresh, Corlett, Ludke, Kerley, and Thornton and Mader referred to below. In most of these missed cases there were some slight symptoms, though overlooked or misunderstood at the time. In Manchester, in 1906, there were discovered 229 missed cases, mostly of a mild character. From these 139 other cases had developed.

"*Number of Atypical Cases*: It is difficult to estimate the number of atypical cases of scarlet fever. Probably it varies according to the extent and severity of the outbreak, and for other reasons. Newsholme has reported a mild outbreak in which the number of sore throats without the presence of eruption was 215, while the number of typical cases of scarlet fever was only 38. Butler, at Wellesden, studied the incidence of sore throat in families where there was reported scarlet fever, and found that 31.2% of 1266 persons in such families had sore throats, while only 2.8% of 1644 persons living in families where there was no scarlet fever had sore throat. In a school with 300 children Thornton found 31 typical cases, 19 cases with no rash and slight sore throat, and 46 cases in which only desquamation was noticed."

There is the explanation of the facts, why we have not done anything, practically, in the control of these three diseases. Whooping cough and measles can not be recognized until the damage is done. In scarlet fever there are two or three or four cases, missed cases, atypical cases, walking through the streets, where one case is quarantined. You know about diphtheria, that there is at least one carrier walking about the street to every case you have penned up.

I should not like to say as much as I have said without going further because some people will say that I ought not to be health officer because I don't believe in quarantine at all. *I do believe in more effectual quarantine than we have ever had.* I believe in seeing these other sources besides simply the person who is visibly sick. The more I study the diseases of the social organism, of the body politic, in contradistinction to the individual body, the more I believe that we are going through the same stage in regard to diseases of the social organism that doctors went through in handling individual diseases. We used to believe that we could take a book and read the descripton of a disease and go out and find all the cases of that disease. Now we find that we can not do that, and the same thing applies to the body politic. These cases have got to be handled according to local conditions and each case by itself, and not by rule of thumb methods.

Let us take the case of measles. A case of measles is reported to the whole time health officer, say of Guilford County. The first essential is that the teacher know something of epidemiology. When she hears of the first case of measles in school, when the case has been in school three or four days, she should know that nine to fourteen days later she will have some more cases. She should teach school one week longer and then disband school for a week. By the end of that week all the cases of measles will have developed and she can open school again, admitting all those who have had measles, not admitting anybody who has a cold or who has not had measles.

Some health officers think the thing to do is to close school. Suppose a case of measles develops in a high school. The health officer or the teacher should find out what children have had the measles. Perhaps forty-five out of fifty have had it. The teacher sends the children who have not had measles home, but the school is not disbanded.

If you once grasp the true nature of the infection you will quit doing things by rule of thumb. A point I want to make is that the majority of these diseases start during the school period, and if we can manage the contagious diseases in school, we will cut down the mortality from what it has been during the last twenty-five years. To handle it through

the school period we have to make rudimentary epidemiologists out of our teachers. I believe it can be done by spending three or four hours with the teachers. In attacking these contagious diseases let the health officer recognize that the teacher who brings these children together so that contact infection can take place, must start the campaign. Let the health officer go out and get the coöperation of the preacher and other persons who have influence, bring the people together and tell the parents their duties under the circumstances. You have to work first through your teachers. Put them on the firing line. Teach them something about the fundamental principles of epidemiology. When you hear of an epidemic get the grown people together and explain things to them. That is the only way you can fight these diseases.

DISCUSSION.

Dr. I. W. Faison: I do not belong to the Health Officers' Association but I do belong to the medical profession of North Carolina, and I am a man who has a great deal to do with child life. Dr. Rankin has said a great many things I heartily support and agree with. He has well taken care of himself—he has made a brief of absolute defense before he has been attacked; he has covered his retreat well before he advanced.

Dr. Chapin, of Providence, is a great health officer. There are other great men in this country along this line besides Dr. Chapin. One is Dr. Doty, who was a classmate of mine. I see so much suffering and death among children that I feel that it is better to go a little wrong and enforce quarantine a little further than to let up, though we may be wrong. Now, I do not put in the same class, when I discuss these diseases, measles and whooping cough, scarlet fever and diphtheria. I look upon two of them as contagious diseases. These are measles and scarlet fever. Now it may be true, and is true, that there is a specific cause for each of these diseases. It is absolutely true that the germs causing these diseases have not been isolated and cultivated. Neither were the germs of poliomyelitis, until 1913, and maybe in 1914 or 1915 or 2013 the germs of measles and scarlet fever may be discovered. The trouble I find is that our quarantine is not rigid enough. Our people are not exactly ripe for it.

I have sat by the bedside and seen children in my town die with whooping cough within the past six weeks. Some person carried it. That is true. Dr. J. Lovette Morse, one of the best pediatricians, says they ought to be quarantined six weeks, or until the germ is absent. This gentleman of Providence is not any better than Dr. Morse, and I prefer to follow the teaching of Dr. Morse to any other man I know who has

to do with children. I believe in quarantining the minute one child in the community shows that he has whooping cough. The minute any child who has a cold goes to any school when there is an epidemic of whooping cough, he ought to be put under strict quarantine.

I believe in outdoor air for whooping cough. I believe it is the best remedy. I have never seen the time when the conditions of North Carolina weather were bad enough to make me house a child with whooping cough.

Now, measles is not so bad as whooping cough, but it is the most contagious of all contagious diseases. It is *the type* of all contagious diseases. Its cause is unseeable, unculturable, unknowable at the present time.

If possible no child under five years of age should have contagious or infectious diseases. It not only tells on him the first five years but during the next fifty-five years. We are told that most cases of tuberculosis are infected under five years of age. My experience has been that the first five years is the most important period of the human life. That is what made me study child diseases. It is in that period in which the child ought to be kept well, and though we may be a little wrong in quarantine, for the Lord's sake give them the benefit of the doubt.

It has been the rarest thing in my experience that I have had two cases of scarlet fever in the same house in same epidemic. I do not expect to have two in the same house, but I quarantine as soon as I suspect that it is scarlet fever. The suspected case is isolated at once and the result is that I have never had two cases in the same house. In the face of all the scientific knowledge on the face of the earth that is good enough for me.

I hoped to hear Dr. Rankin discuss the quarantine of smallpox. He did not. During the past month two young students developed cases of smallpox at the State University, the educational pet of the State. The authorities called on Dr. Rankin and Dr. Richard H. Lewis to go over and see what to do. They went, found the cases of smallpox as reported. They proceeded at once to put these young fellows in strict quarantine. It came out in the daily papers next morning all over North Carolina that they had quarantined these cases and that it would be safe for the people to attend the oncoming commencement. This they did, after going to the Legislature and getting the law compelling quarantine of smallpox repealed. I want to commend them for this quarantine, and insist that it was right.

Furthermore, I want to say if it is right and best to quarantine the smallpox at Chapel Hill so the people of the State can attend the com-

mencement I contend that it is right to quarantine at Charlotte and all over North Carolina for the protection of our babies.

Dr. Chas. W. Stiles: This is not the first time we have heard Dr. Rankin talk about quarantine. Some of us have been on the opposite side of the fence in this matter. I want to say that this is the first time I have ever heard Dr. Rankin make his point clear, the first time I have understood his position. It seems to me that it can be summarized in this way, briefly: Dr. Rankin is not arguing against a rigid quarantine, but for a more rational quarantine. I think Dr. Rankin would be, under some circumstances, the most rigid quarantine man in this State, if he considered that circumstances called for that kind of a policy. I want to surrender to Dr. Rankin. I have never understood his position before, but I am with him now.

Dr. Rankin: We are going to have some more radical stuff after dinner. I think Dr. Faison will talk some more. There is not a man in North Carolina I admire more than this gentleman. He is always ready to fight at any time, anywhere, under any kind of conditions. He comes out in the open and strikes. What I started to say is this: I know something about what will come out in the discussion of disinfection this afternoon. Disinfection and quarantine are so closely related that I move that we adjourn now and postpone discussion until after dinner.

Adjournment for dinner.

AFTERNOON SESSION

Dr. L. B. McBrayer: I want to make a few remarks in regard to Dr. Rankin's deductions from his statistics. I would like to submit that things have been changing in the last few years. Twenty-five years ago, when he began his statistics, our population was very largely rural, compared with what it is today, and everyone knows that when people are isolated contagion does not spread. With the means of transportation and with the increase of the thickly populated communities, with increase of good roads, it is very easy for a resident of Asheville to visit towns in the middle of the State and contract typhoid fever from bad water and bad privies and go back to Asheville and have typhoid fever. The same is true of all the other diseases. I agree with Dr. Rankin most heartily in what he said in regard to measles, with one exception. He stated that the germs of measles and scarlet fever did not live outside the human body. I know, however, that that was simply

a matter of overexuberance in his discussion of the subject, because he later corrected himself and stated that these germs had not yet been discovered. With his method of handling measles I agree most fully, except that I think that parents should be required to keep the child on their own premises, not only the child who has measles, but also the other children who are not immune to measles. The matter of dismissing school a week after a case has developed in a school child seems to me the solution of the problem. I must say that in the main I agree with Dr. Rankin in his opposition to quarantine of smallpox. Of course there are exceptions, as were stated—the University and Asheville. We quarantine smallpox in Asheville not because, I think, as a rule we ought to, but on account of the commercial side of it, on account of the many visitors we have, because I believe that any citizen of North Carolina who wants to have smallpox ought to be allowed to have it.

There is another point, that is the helpless babies and children that Dr. Faison talks about so eloquently and feelingly. It seems that they ought to be protected against the ignorance and viciousness of their parents. While we require in Asheville that all school children be vaccinated before they go to school, and enforce this law, you might not be able to enforce it in every place in this State. There is a good deal of trouble in as intelligent a county as Guilford in enforcing compulsory vaccination, even for school children. That forms a very serious obstruction to the abolition of quarantine for smallpox.

Dr. Rankin spoke of the missed cases and the carriers and charged them up with a great deal of distribution of the contagion in these diseases, and that is largely true, I am sure. But what we have to do is to act on the knowledge we have, and, as Dr. Faison said, give the innocent and helpless the benefit of the doubt. I have two instances that are interesting to me, and perhaps would be interesting to you. One of the missed cases of scarlet fever was sick and stayed out of school two days. The child was in the kindergarten. The child returned to school and there was not a child in the entire kindergarten of about eighteen that developed the disease. However, in the family of five all the family had it except the largest girl, about eighteen years old. None of it was very serious and no physician was called at all and it was only reported by the teacher, who heard that the children at the house had an eruption. Upon examination it was found that they all had had scarlet fever. The balance of them stayed out of school for a longer period of time than this child in the kindergarten, all of which

makes one doubt whether or not scarlet fever would be classed along with measles as a contagious disease.

Now, in regard to diphtheria carriers, we have also had a little experience that may be of interest to you. We noticed one day that we had more cases of diphtheria than we ought to have in Asheville. In checking them over we found that seven of the fourteen cases were under school age, that five of the seven going to school were in one school and in one grade, and that two of the seven were in another school. Upon investigation it seemed that three of the five children had played with one of the others while it was sick in the first part of the disease. Two or three days later some other cases broke out in the same grade and it occurred to us that it was time to get busy. We went out and swabbed the throats of a dozen children in that grade and ten of them showed diphtheria germs. We dismissed that grade, continued to swab the throats, and in the course of a few days we found that 100 children out of 500 in that school were diphtheria carriers. We issued an order to close school for a week to give time to get our bearings and catch up with the work, and notified the children they would not be allowed to return until they had a certificate stating that their throats were free from diphtheria germs. We also closed the picture shows to children, and the Sunday schools, hoping thereby to confine the infection to that school. We had three or four other cases occurring within the first week after we closed the school and after that no other cases, and it was interesting from the fact that we had in that school so large a number of carriers that ordinarily are overlooked and that ordinarily continue to distribute the disease. It is my opinion that had we not taken rather drastic measures we would have had an epidemic of diphtheria.

Question: What did you do to get rid of them?

Answer: We did almost everything but used the solution of staphylococci, but most of them disappeared in a few days. A few held on for a long time. We used carbolic acid, bichloride of mercury, nitrate of silver, in fact, I think almost everything along that line was used. None of it did much good. Certainly it did not seem to in those cases that hung on for quite a long while.

That does not argue to my mind against quarantine in diphtheria any more than the fact that the large number of murderers loose today argues against the law forbidding murder. We don't pass a law expecting that everybody will obey it, but hoping that the large majority will obey the law and that those who disobey will be punished and thereby deter others from violating the law, but a good many escape in

spite of all we do and it is probably the same way with a good many of the infectious diseases. But our vigilance should be all the greater on account thereof.

Dr. I. W. Faison: It happened in my town last fall that one boy in a family of three children went to school and one day I was called to see the little girl who did not go to school. She had a case of diphtheria. The mother was very much upset to know why that little girl who did not go anywhere had diphtheria. I had a swab made of the boy's throat and found it full of diphtheria germs. They were given, of course, antitoxin and it cured them and in the course of four or five days the germs disappeared. Now these germs in the child's throat may remain indefinitely, how long we do not know. The last time I was in New York I was at a children's clinic with a friend of mine—a physician. In November he reported being called by the board of health to make a visit and found a little girl with a case of diphtheria well developed. He treated the little girl, she promptly got well, and three days successive examination of swabs of the throat showing three successive negative reports they turned her loose. When he examined again the boy's throat he found the bacilli, though the boy was well. He then took the ground that as long as the child was well he would let him alone. He kept the boy in the hospital from April to November, making a culture every week, every culture showing the bacilli. In November he sent him out on the street and produced a little pharyngitis and cold. As soon as the time went around after the exposure he developed diphtheria. He was given antitoxin, the throat swabbed out and in a little time was cured.

About scarlet fever, you will find that statistics show that when children are exposed to scarlet fever about 50% take it. In measles about 90 to 95% take it.

Dr. J. Allison Hodges: Ordinarily, gentlemen, I would not have anything to say in such a meeting as this, except of course that my interest is always with the medical profession of this State. Having, also, been for a number of years a member of this board of health, and being a member at the time I left, I take a great deal of interest in such matters as are engaging your attention today. I want to call attention to two fallaices that seem to me are not given sufficient importance before the people of the different counties and these two fallacies I believe are largely responsible for the increase in the mortality rate of the contagious diseases mentioned here this afternoon.

One of these fallacies is calling any form of scarlet fever by the name

of "scarlatina," and the parents presuming that they have to contend with a small enemy instead of a tremendous one. Now I believe if these gentlemen in the counties would teach and preach to the people and to the school teachers of the county that there is no such thing as scarlatina it would eliminate a fallacy that would do much towards the betterment of our mortality statistics in that one disease.

Then another thing is this: It seems to me that when we resolve our work into its last analysis the teachers, aided and abetted by the county superintendent of education, are the most forceful means that we have for the propagation of health and preventive knowledge. All of us know that no law is any stronger than the public sentiment that is behind it. Now then, it seems to me, and I simply make the suggestion, but not as an outsider, I assure you, if some practical lectures could be given to the school teachers, on such simple subjects as "sore throats" or "coughs," and let the physicians indicate to the school teachers the dangers of a sore throat, what potentialities there may be in a simple sore throat, of what diseases this simple sore throat may be a symptom, etc.; show them how sometimes it is the first danger signal of muscular rheumatism, how that muscular rheumatism leads to an endocarditis, either simple or more serious; tell them how these simple coughs that the children have, these coryzas, are symptomatic of some of these contagions that we have been discussing here this afternoon, and I believe that the combined influence of the doctor and the teacher and the parents would be of the greatest assistance in the betterment of these statistics.

It is a curious fact to me, living as I do at present on the border line between the North and the South and seeing numbers of parents from both sections, to note the different light in which Northern people view such an apparently insignificant thing as a sore throat or a simple cough as compared with our own people, who simply let their children run wild and take no notice of such symptoms. With the Northern people I notice that it is a signal that the child shall be put to bed and be treated for several days. With us it means as a rule that the child is a little bit sick, but not sick enough to be restrained. I believe that the teaching of these Northern parents is due, in large measure, to the physicians, who presumably have more time and get more money than we do to talk about such things, and this may have had the effect of frightening these mothers and the result has been for the best interests of the child. It is a fact that people used to think—I have heard it time and again and possibly some of you may have heard it—that children must have these contagious diseases. That is one of the great fallacies that preventive medicine has had to confront. I believe

that a great many parents believe that it is a necessity at some time before puberty, and they really regard it as best that the child have these diseases before puberity, and for that reason they are more careless than they would otherwise be. I believe it is our duty as physicians to inculcate into these parents the fact that in the early years of life there is less resistance, that it is fallacy to believe that their children should have these diseases, and especially that they should have them in the earlier and tender years of life. I am sure that all I have said is absolutely familiar to you, but I call attention to the fact because I have noticed in talking recently to different gentlemen from different sections that there seems to be a little disappointment in preventive measures in contending with contagious diseases, because, as Dr. Rankin has shown us, there has been no decrease in the statistics. I wish to say that I believe we should be proud of what we have done. When I hear such discussions as this and compare it with twenty years ago, when with some of our fellows we discussed the same proposition, I wish to say that a new light has dawned and a new future seems to me to be before the medical profession of this State, and it is to their credit that this great improvement in sanitation and hygiene and preventive medicine has been made. When I hear today, as I have heard, that a member of this body is willing to do what he can in his county for $50 a year to benefit the people of his county, I repeat, it is all to the credit of the medical profession of North Carolina and we need not despair. In another ten years we will see the great improvement Dr. Rankin desires in his statistics.

Dr. Rankin: In the first place, I want to say that Dr. Faison's reference to the University case left a little more sting than any other subject he touched. I want to confess that it got pretty close to me. But it illustrates the particular point that I want to make in handling these contagions. Just as there is no general rule by which you can treat any individual, so there is no general rule by which you can treat disease in the body politic. I believe it would be the rankest folly for the people of Atlantic City to adopt the policy I advocated for North Carolina in regard to smallpox. The only thing for those people to do is to have compulsory vaccination and quarantine too. It is the same in this town. Let the people of the town announce no quarantine, and it would seriously affect the industries of the town. I believe in compulsory vaccination. I do not care a thing about quarantine. Let the people understand they cannot keep up quarantine without compulsory vaccination. I have one fixed opinion for North Carolina—no quarantine for smallpox.

Now, I use that to illustrate the fact that there are very few general principles of universal application in health work, just as in individual disease.

Dr. Faison stated that the first five years of life are the most important, so far as the fatality of these contagious diseases are concerned. That is a fact, undoubtedly, but children under five in nine cases out of ten contract disease from children in the schools. So I want to emphasize again that the central point of attack is through the school teacher and the school population.

Dr. McBrayer makes a good point in behalf of preventive medicine that I neglected. He says that even if we have not decreased the fatality of these diseases, the fact that we have been able to hold it down with the increase in population is a point in our favor. It is a point, but such a small one that we would not care to call attention to it.

In regard to getting rid of diphtheria carriers, I read an editorial in a recent number of the *Journal of the American Medical Association*, in which it was stated that you can not do anything with the carriers now, the present means of treatment proving ineffectual, but that the work of Schiotz with his staphylococcus culture gives very promising results. He notes that a number of carriers failed to have the germs in their throats after simple pharyngitis. It looks as if we are going to find something in that to handle carriers of diphtheria with.

As to the fact that children can come into a room and contract measles and not scarlet fever, it is true, but it has been shown in the hospitals that you can put children in rooms occupied by children with contagious diseases, provided you have trained nurses who employ all of the careful antiseptic restrictions that they employ in surgical cases. In that case 100 children could come into a room where there is a case of measles and not take it. That is the case in Paris.

Dr. Hodges makes a strong point on that word "scarlatina." I wish it were swept out of the dictionary.

Finally and lastly, I want to thank Dr. Stiles for stating in a few words just the position I hold. It is not, gentlemen, that I love quarantine less, but I love a hundred times more the more important restrictive measures. I believe in the quarantine of measles and whooping cough and scarlet fever and diphtheria, and so does the man who has influenced me very largely in my views, Dr. Chapin, and I want to close with one chapter from his book.

"*Isolation of Villages.* The efficacy of isolation under such circumstances is well illustrated by the history of outbreaks of the common contagious diseases in the smaller cities, townships, and villages of Michi-

gan. The data given in the annual reports of the board of health of that State are of great epidemological interest, and my discussion of the subject on another occasion is here given.

"Only those places are considered which have remained free from the disease for at least sixty days, and this unfortunately is never true of a city of any considerable size. The outbreaks reported are arranged in groups, one in which isolation and disnfection were both enforced, one in which they were both neglected, and one in which the reports did not state with sufficient exactness what restrictive measures were carried out. The following is a summary of some of the tables in the report:

	Number of Cases per Outbreak.			*Number of Cases per Outbreak.*	
	Restrictive Measures Not Enforced.	*Restrictive Measures Enforced.*		*Restrictive Measures Not Enforced.*	*Restrictive Measures Enforced.*
Typhoid fever, 10 years..	5.82	3.13	1900..	6.72	2.22
Diphtheria, 14 years.....	11.12	2.11	1900..	4.85	1.71
Scarlet fever, 14 years...	11.95	2.32	1900..	10.43	2.53
Measles, 11 years.....	48.30	3.03	1900..	27.60	4.67
Smallpox	.....	....	1900..	32.00	3.80

"*Isolation Effective.* Several things are to be noted in connection with these figures. In the first place, isolation and disinfection accomplish very much in preventing the extension of all these diseases. The number of facts is so great, the outbreaks of each disease running into the hundreds, and the difference between good and bad sanitation is so manifest in each one of the years for each one of the diseases, that the success achieved must be a very real one. It appears certain that isolation and disinfection as practiced in the smaller communities of Michigan reduce the cases of contagious disease in round numbers from 45 to 95%.

VALUE OF TERMINAL DISINFECTION.

WARREN H. BOOKER, C.E., ASSISTANT SECRETARY, STATE BOARD OF HEALTH.

Disinfection is about the only other thing that beats quarantine when it comes to a haphazard, go as you please, hit and miss general policy. The practice of disinfection varies all the way from absolutely no attempt at disinfection, even in the case of typhoid and tuberculosis, to "disinfection gone mad" as in the case of chickenpox, or the disinfection of an empty house when the family returns from the summer vacation, or even "disinfecting" ordinary earth where it is excavated from cellars and postholes.

We know the cost of disinfection is enormous. I had no way of finding out what it really does cost our State annually, but just to give you an idea of what some other folks spend for disinfection I wish to call your attention to the following figures which show the cost of disinfection in a few large cities five years ago:

Cost of Disinfection in One Year—

Boston	$20,123.49
New York	55,369.41
Philadelphia	24,115.75
Baltimore	6,603.78
Washington	5,786.00

Now if there is any part of our public funds which to my mind require to be expended judiciously it is our miserably inadequate public health funds. If more lives can be saved by spending our money for disinfectants let's disinfect, but if more lives can be saved by employing whole time county health officers, public health nurses, distributing literature or some other way, let's try to get the most for our money.

Now right at this point it might be interesting to take a little straw vote, just here among ourselves, for our own information, to find out where we really do stand on this question. I have prepared a blank chart here which we can fill out in a few moments if everybody will vote promptly. (The straw vote showed the following results. Several of the health officers failed to vote.):

TABLE SHOWING THE PRACTICE OF HEALTH OFFICERS PRESENT IN THE MATTER OF DISINFECTING OR FUMIGATING AFTER CERTAIN DISEASES.

Disease.	*Disinfecting.*	*Not Distinfecting.*
Measles	4	14
Whooping cough	6	14
Scarlet fever	25	0
Diphtheria	25	0
Smallpox	17	3
Tuberculosis	15	2
Typhoid	10	9
Pneumonia	0	25

(This table, while it can scarcely be said to be truly representative of the practice in North Carolina, yet it indicates that perhaps a fourth of our health officers practice some kind of terminal disinfection after measles and whooping cough, and practically all disinfect after scarlet fever and diphtheria.)

For some years the value of terminal disinfection in the case of several of the communicable diseases has been questioned largely because the increased rigor and the increased efficiency of disinfection was not followed by a decrease in the prevalence of these diseases or a decrease in the number of secondary cases occurring. These observations have

been particularly true in the case of scarlet fever and diphtheria. In fact we are beginning to learn that some of the contagious diseases are not nearly so contagious as we used to think they were. In the average family the chances of children contracting scarlet fever even at the most susceptible age is only one in three and for adults it is one in fifty. Now we will all have to admit that the danger of contagious disease from infected things is a whole lot less than from infected persons. The infected person is the hotbed for these germs. In him they are continually developing in enormous numbers while in the case of objects they are dying rapidly.

In scarlet fever and diphtheria a careful study seems to indicate that an extension occurs in only about six or seven per cent of the families. Most of this secondary infection occurs before the disease is recognized, or among families known to have visited infected households. When there is no interfamily communication there is little spread of the disease.

The theory of infection by objects never had a very good basis. Of course, there are reported cases where infected objects appear to have been the connecting link between the infected persons and those contracting the disease, but the percentage of these cases to our total cases is comparatively low. Even in these reported cases there is almost never any real evidence that the disease has been caused by infected objects. There is usually only a possibility or even a probability, while a demonstration that infected objects were the cause of disease would be almost unique. Experience indicates that where objects are under suspicion, persons have been found to be the bearers of the objects or otherwise closely related and as stated above persons are far more apt to be the bearer of germs fresh from the factor for germs than are objects.

The idea of infection from objects is an ancient theory, founded when we knew quite a bit less about communicable diseases than we do now. Witness malaria and the miasmatic air, or yellow fever and the objects on shipboard. In fact this theory has been maintained largely because it afforded the only explanation of the phenomena of disease extension. When other and better explanations are at hand this old theory may be questioned and it is up to those that would uphold this theory to back it up with some good direct observation or experiments if they wish to see it stand.

But there are other modes of infection besides from objects. Direct contact is the most obvious method of infection. True, not many people come into contact with the contagious sick, but did you ever stop to

think of the abundant opportunity for contact between the general public and the convalescent, the healthy carriers and the mild unrecognized cases? In view of all these known and unknown sources of infection the only wonder is that we do not have more cases than we do. If infection from objects were as effective as we used to think it was there would be far more contagious diseases than we have.

In weighing the evidence of infection from objects and infection by contact the most important point of all is the matter of the virulence of the germs. In the case of objects they have become cold, dried and inactive, while in the case of carriers, etc., they are fresh, live and virulent. This is, in my opinion, the most important consideration of all.

These considerations and others, therefore, were what led such men as Chapin and others to question the value of terminal disinfection, particularly in the case of diphtheria and scarlet fever. In March, 1905, terminal disinfection after diphtheria was discontinued in Providence with the result shown in the accompanying table:

PROVIDENCE (DIPHTHERIA).

DISINFECTION.

Year.	*Cases.*	*Recurrences.*	*Per Cent.*
1902	530	8	1.51
1903	706	7	0.99
1904	780	19	2.44
1905	140	2	1.43
Total	2,156	36	1.67

NO DISINFECTION.

Year.	*Cases.*	*Recurrences.*	*Per Cent.*
1905	422	5	1.18
1906	407	6	1.47
1907	570	7	1.23
1908	917	17	1.85
1909	639	3	0.47
Total	2,955	38	1.28

From this table it will be seen that the secondary case rate was not increased after disinfection was discontinued. In other words it seems that ordinary terminal disinfection has no effect on diphtheria. In Baltimore terminal disinfection with check tests was continued through the same years in which it was discontinued in Providence.

The following table is given for Baltimore to serve as a control with reference to Providence:

BALTIMORE (DIPHTHERIA).

DISINFECTION AND CHECKS.

Year.	*Cases.*	*Recurrences.*	*Per Cent.*
1903	1,096	20	1.82
1904	1,241	18	1.45
1905	962	17	1.77
1906	1,172	22	1.87
1907	867	21	2.42
1908	837	10	1.19
1909	756	14	1.85
Total	6,931	122	1.76

After such satisfactory experience in Providence with diphtheria without terminal disinfection it was decided to discontinue disinfection after scarlet fever with results indicated in the following table:

PROVIDENCE (SCARLET FEVER).

DISINFECTION.

Year.	*Cases.*	*Recurrences.*	*Per Cent.*
1904	1,220	23	1.88
1905	454	6	1.32
1906	615	12	1.95
1907	809	10	1.24
1908	389	3	.77
1909	75	3	4.00
Total	3,562	57	1.60

NO DISINFECTION.

Year.	*Cases.*	*Recurrences.*	*Per Cent.*
1908	52	1	1.92
1909	552	16	2.90
Total	604	17	2.81

The following table from Baltimore where disinfection and checks were used is given as a control:

BALTIMORE (SCARLET FEVER).

Year.	*Cases.*	*Recurrences.*	*Per Cent.*
1903	1,224	10	0.89
1904	1,222	21	1.72
1905	615	12	1.95
1906	577	7	1.21
1907	436	11	2.52
1908	1,262	17	1.34
1909	456	6	1.31
Total	5,792	84	1.44

The results, both in the case of diphtheria and scarlet fever indicate, that within the limits of error terminal disinfection is of little or no value.

In general the number of recurring cases in families is believed to be a measure of the value of disinfection. Others claim that this is not a fair test because there are about as many recurrences after return hospital cases as after terminal disinfection and that the recurrences are, therefore, largely due to carriers.

The accompanying table from the experience of Boston shows the time at which secondary cases occurred after the fumigation in a number of fumigations after scarlet fever and diphtheria. All these cases were fumigated within forty-eight hours after reporting or removing to the contagious disease hospital.

RECURRING CASES AFTER DISINFECTION.

	Diphtheria 2,675 *Fumigations.*	*Scarlet Fever* 1,748 *Fumigations.*
1 to 3 days	4	3
4 to 7 days	15	9
1 to 2 weeks	8	4
2 to 3 weeks	6	2
3 to 4 weeks	2	2
Over 4 weeks	13	7
3 to 33 days.	1 to 30 days.	
1 to 34 days.	1 to 32 days.	
1 to 35 days.	1 to 33 days.	
2 to 37 days.	1 to 40 days.	
1 to 48 days.	2 to 42 days.	
2 to 50 days.	1 to 57 days.	
1 to 53 days.		
1 to 54 days.		
1 to 58 days.		

The main point of the table is that it does not indicate that terminal disinfection was of great value when it is remembered that many of these secondary cases were exposed to the original case as well as to the same source of infections as the original case.

Both theory and facts, so far as the data go, indicate that terminal disinfection is of little value in the case of diphtheria and scarlet fever. The very feebleness of the germs of influenza, cerebrospinal meningitis and pneumonia indicate that inanimate objects have little or no part in the extension of the disease and that terminal disinfection is of no value. In diseases in which there are a number of carriers, missed cases and infectious cases up and about, disinfection can be of very little value.

These general views in regard to disinfection seem to be gaining ground rapidly. The periodical disinfection of schools is falling into disuse and Kerr, the chief medical inspector of schools in London, claims that schoolrooms can rarely be at fault in school outbreaks of contagious diseases.

A very great part of this matter of disinfection seems to be like the armor plate industry. If we did not have armor plate manufacturers we would miss a great many near wars and if we did not have manufacturers of disinfectants we would miss many good chances to catch something—nobody knows what.

But someone asks would you pass up the whole matter of the contagious diseases, without any effort to prevent its spread? Oh, no, that is not the idea. The patient is the hotbed for the germs. Direct your attention there. Get at the root of things. Devote all the well meant energies formerly directed toward terminal disinfection toward obtaining scrupulous cleanliness in the care of the patient. Plenty of soap and water daily on the things directly in contact with the patient and on the hands of the nurse will do much to prevent the spread of the disease in the family. Teach the patient and the public the utmost care in regard to everything coming from the patient, such as his fecal matter, urine, sputa, his soiled clothes, bed linen, dishes, unconsumed food, etc. Terminal disinfection on the whole is a mistake. It detracts attention from the main issue, namely, the importance of contact infection and the necessity for personal cleanliness. It is not a harmless custom either, but it is positively injurious in that it focuses attention of the layman upon unimportant modes of infection. Moreover it costs money.

Now as health officers we have at least two more very important diseases about which nothing has been said—typhoid and tuberculosis. In the case of typhoid there is not much chance that anything will escape to objects in a room which terminal disinfection could reach. In typhoid the utmost care should be used to thoroughly disinfect all the discharges from the patient. This should be done whether the discharges are later emptied in sewers or otherwise disposed of. Perfect cleanliness in typhoid as in the other diseases contemplates the entire absence of flies, mosquitoes, and other insects from the sickroom and everything connected with the sickroom.

One of the best and cheapest disinfectants for fecal and other discharges in chlorinated lime, or choride of lime or bleaching powder, as it is sometimes called. A pound can costs fifteen cents and makes four gallons of solution, enough for one day. For the hands of the

nurse a 1 to 1,000 solution of bichloride of mercury is good. Soiled bed linen and clothing should be boiled for thirty minutes, or a three per cent carbolic acid may also be used.

This brings us to the last important disease requiring disinfection with which we as health officers have to deal, namely, tuberculosis. Now all the experts on tuberculosis assure us that a careful consumptive is not dangerous to live with. Now it would seem that if a live tuberculous person is safe to live with his house should not be dangerous after he is dead. Personally I have always felt that a consumptive was not quite so safe as when he is dead. For that reason I am not quite willing to take the advanced ground that after the death or removal of a consumptive, particularly a careless consumptive, we should not make a thorough cleaning, disinfection, if you please, of his apartments. However, I wish you to appreciate my point: If a consumptive has been careless all his life, at least through his sickness, his family will gain little or no security by the rite of disinfection after his death.

As everybody knows, however, practically all the importance, all the value of disinfection in the case of tuberculosis is in disinfecting every particle of matter that is given off by the patient. Bedside disinfection to be sure, but the ideal way would be to begin years before that, begin just a little before the coughing and spitting. I shall not attempt to tell such an audience anything about the details of handling tuberculosis—you are all familiar with the difficulties and the usual well known methods. My only point is in questioning the value of terminal disinfection in many cases of tuberculosis and in urging closer attention to the patient himself from the very beginning.

Now in conclusion let me state that while in my opinion the general attitude toward terminal disinfection is that it is of very little or no value in the ordinary contagious diseases yet if in a community, particularly in a small community, a particular contagion develops in one or two cases we would doubtless be justified in taking more than ordinary precautions to stamp it out than would be warranted in the event that there was a well established epidemic, such as the statewide epidemic of measles last winter.

In the wind up the whole thing resolves itself largely into an economic problem. We have so much money. We have urgent need for one hundred times as much. How shall we spend what we have? We cannot do everything. Naturally you say do that which will net us the greatest saving in human lives. So far the data does not seem to indicate that very much is to be expected from expenditures for terminal disinfection.

DISCUSSION.

Dr. C. A. Shore: Dr. Stiles used the word this morning that I think is very fitting. He spoke of "rational" quarantine. I think in disinfection our problem is altogether one of rational disinfection. If we limit the term disinfection to fumigation there is no doubt but that it has been overrated as a means of doing good. On the other hand, there is rational disinfection to be done in most diseases. When we know the infecting agent the problem is simplified, for we can apply rational disinfection. Where we do not know the infecting agent, it is much more difficult. It would be criminal, of course, not to disinfect after typhoid and tuberculosis—disinfect the bed clothing and excreta in typhoid, and the sputum in tuberculosis. Wherever we can we should find out the rational method of disinfection.

Dr. J. W. Halford: Discussing the matter of what diseases we should quarantine, or after what diseases we should disinfect, I can speak of my own experience in public health work, covering a period of several years. I believe that the money we have spent in fumigation, especially, has largely been money thrown away. As regards the exanthemata, all of you have come into contact with persons suffering from chronic diseases who date their troubles from a previous attack of measles, and so frequently have I encountered cases of tuberculosis dating their trouble from a previous attack of measles that I am almost inclined to believe that that should be considered a primary symptom of the white plague. At any rate, those people having measles frequently develop tuberculosis, and we should use some method of quarantining until we have found out the cause of this disease, and the other diseases we have had under discussion. I think it would be very unwise, even in the face of the data produced here, to do away with disinfection, but we should disinfect in a sane manner. As applied in the average country home, it is labor thrown away.

In regard to smallpox, I believe that our statistics show that we are having a smaller number of cases of smallpox in Harnett County through our present method of handling this disease than we had formerly. I think it was very wise to discontinue the quarantine of smallpox. It saves hundreds of dollars that were thrown away each year, and that accomplished nothing. I believe our county will show a smaller number of cases of smallpox now than it did under the former method of quarantining.

As regards the agent we use for fumigation, of course formaldehyde is the only agent, because it leaves no damage behind. As to the educa-

tion of the public in these matters, that is a stupendous task, and we are taking it very slowly, especially in some of the backward counties.

Dr. L. B. McBrayer: I have enjoyed the papers and discussion very much, and I desire to congratulate Mr. Booker upon the interesting way in which he presented his side of the case. I am glad that the thing has been really tried out. A great many statements that are made are the creation of some one's imagination or quotations from other people. Mr. Booker quoted from some one else in this particular instance, but he had authority for his statements. That is the trouble with a great many things. Somebody says them and everybody repeats them. We get information that is not correct.

In regard to fumigation, in the city of New York they practice as a routine the planting of the *B. Prodigiosus,* as Dr. Rankin has described, and they expect their fumigation to kill it and to get no growth from cultures. We have done that in Asheville in various cases, and we intend to make it an occasional occurrence, trying out the man who does the fumigation to see whether he is doing it properly. In every instance where we have tried it there has been no growth.

Now, I am perfectly willing to take my chances with tuberculosis or anything else, if I know that proper hygiene and proper disinfection are carried on at the time. If there was no quarantine I would prefer, especially after tuberculosis and typhoid fever, that we have terminal disinfection.

I asked a health officer once why he continued to use the ——— method of disinfection instead of formaldehyde. He said he did it for the moral effect on the people. If you use this method, it is not understood by the laity, and it looks as though you are doing something, while if you go and disinfect with a formaldehyde candle or with permanganate, there is nothing to distinguish you from an ordinary citizen. That may be one way of educating the people. If, so, it may be money well spent.

Dr. W. S. Rankin: There is this thing that has not been said in this discussion that I want to say about the efficiency of terminal fumigation, namely, that there are certain laboratory experiments, in addition to the statistics which you have heard, that cast doubt upon the value of terminal fumigation. Experiments show that if you take a sterile thread, dip it into a bouillon culture of any kind of a germ, put the thread, after drying it, into a room, closely seal the room and fumigate with any commercial disinfectant, then take the thread after it has remained in the "disinfected" room six hours and place it in a sterile

bouillon, you will get no growth. The conclusion which has been drawn in the past from this test is that the germs on the thread were killed by the "disinfectant." The error of this conclusion is readily shown by the following laboratory test: A sterile thread is exposed to the fumigation process in a well sealed room, and after the proper time has elapsed—six or eight hours—placed in sterile bouillon. Pure cultures of any pathogenic germs will now fail to grow when planted in the sterile bouillon that has received the sterile thread which was exposed to the fumigation. This is due to the fact that the thread exposed to the formaldehyde absorbed enough formaldehyde gas so as, when placed in the sterile bouillon, to render the bouillon antiseptic, thereby preventing the multiplication of any pathogenic germ. In the first test the dry germs on the dry thread were living when placed in the sterile bouillon, but the formaldehyde carried into the bouillon by the thread prevented their growth. This is proved by the fact that pathogenic germs in a dry condition, and exposed to formaldehyde are not killed, and it is only when the germs are moist, that is when culture is on some liquid, semiliquid or gelatinous media that they are killed.

Again, I do not want to be misunderstood, I still believe (the word "still" is used advisedly here), in disinfection after the four contagions, but I do not believe that disinfection is worth one-hundredth as much as careful sanitation during the course of the disease.

Dr. L. N. Glenn: As regards the second part of this discussion, what we shall use in disinfection, when I first took charge of the county health work of Gaston County the county spent quite a sum of money every year in buying these loud smelling disinfectants that the man tried to sell to the board of commissioners, who knew no better than to buy them. These things were used in our county jail and convict camps. The county authorities thought that they were doing wonders. I succeeded after a while in getting the commissioners not to buy any more of that stuff. We have a very modern and excellent jail, with city water, concrete floors, and that jail is scrubbed and flooded with water at least once every month, oftener if necessary. If a prisoner is especially active in keeping himself dirty he is isolated. In our chain gang the same thing applies. We formerly used straw for bedding in the stockade, but we quit that because you can not keep it clean. We now use ordinary cheap mattresses which are put on the floor. The floor is scrubbed thoroughly with soap and water once a week. The mattresses are slept on at night and carried out in the morning by the house boy and placed on what we call the scaffold, in the sunshine. Just before the prisoners come in from the roads the mattresses are

put back in the cells. Since we have adopted this plan I have not seen any kind of vermin about the camp. Our conclusion is that if you use plenty of soap and water and proper care about these places you are just as well off without any disinfectant.

Every prisoner that comes to our jail, no matter if it were one of you gentlemen, is stripped and given a head to foot bath with hot water and soap and is scrubbed thoroughly and a prison suit put on. Unless you do that you will have lice, and sometimes it is a pretty decent looking white fellow who brings them in. The prisoners are bathed regularly once a week and oftener if they wish. It is routine practice to give the man his initial cleanup before he goes into the cell. It is the only method I know of that will keep the jail free from lice.

HOW TO HANDLE THE CONTAGIONS IN SCHOOL POPULATIONS.

George M. Cooper, M.D., Clinton, N. C.

The discussion of this subject must of necessity be brief. If the program committee had given me the question reading "How are the Contagions Handled?" I could, so far as concerns one North Carolina county, answer—they are not handled. And as long as petty politics plays an important part in the selection of school trustees and of underpaid teachers they are not going to be handled. Furthermore, as long as some families and individuals have a little more "pull" with the powers that be than others equally as worthy of consideration, so long will the problem remain the same.

There is only one way to deal with any school contagion and that is send the child home and keep him there until he is well. And to send the child of Banker Jones home with the measles at the same time plain John Smith's boy has to go on account of whooping cough, when Jones happens to be chairman of the board of trustees, etc., and young Jones may be barely skimping along just over on the right side of grade promotion, requires a little bit of nerve all along the line. But it is the only way to protect the rest of the school from measles.

One way to handle the ordinary troublesome school contagions is to somehow get the public to comprehend the fact that measles and whooping cough are just as dangerous as diphtheria. Doubtless every man here was struck with the report of Census Director Durand recently, in which the registration area of North Carolina shows up bad with a high mortality from measles and whooping cough, and with a low mor-

tality from the popularly horrible diseases of scarlet fever, diphtheria and smallpox. To my mind the reason seems clear, that is, the public does not regard the socalled diseases of childhood with the apprehension they should and therefore makes it impossible to isolate the victims, because no law is any stronger than the public or popular opinion behind it.

To properly handle contagious diseases among the schools the whole business must be revolutionized, the entire system changed, and it cannot be accomplished without the coöperation of, not only the teachers in the schools and the superintendent of schools, but also the boards of education and the local trustees. We must impress upon every man whose child is stopped from school that it is done without discrimination and for the best interest of the public, that he must be willing to sacrifice his individual liberty for a few days on behalf of that larger liberty of the community. In other words, in the language of the Golden Rule, he must do as he would be done by.

We must have a different system of reporting the presence of disease in a community, that is, less dependence put on doctors and more on families, because of the fact that so many dangerous diseases are never seen or treated by physicians.

We must have a whole time health officer for each county, with the proper assistance, who will enforce the law without fear or favor.

We must overcome that terribly fatalistic creed, opinion, or belief, that graveyard of all efforts of preventive medicine, that age old argument, that perhaps nothing would happen anyhow. The typhoid germ might be swallowed and maybe there would be no typhoid, the child might be exposed to whooping cough but perhaps he would not catch it, or by good luck, not die if he did.

We must have a rigid medical inspection of schools. We must have the better coöperation of better teachers. And how can we have better, more intelligent teachers, unless the State is willing to pay them a living wage? "Is not the laborer worthy of his hire?" The average negro cotton picker in our Carolina fields enjoys a greater annual income than do one-half the women rural school teachers of our State. Pay them a sufficient salary and demand character, ability and high moral standards in return and then, and not until then, will we get the service our schools and the health our population deserves.

And now in conclusion, to make our great State the desirable abode to which our climate, location and diversity of soils and conditions and occupations entitle us, we must, as professional men who love our pro-

fession and its standards as we do life itself, continue to battle for human rights in preference to property rights.

With apologies to Dr. Rankin and the Indiana State Board of Health, I will relate the following: Some time ago one of the wealthiest farmers of our county had a lot of pure bred hogs; cholera appeared among them and in response to an urgent message the North Carolina State Agricultural Department sent an expert veterinary surgeon down there from Raleigh to give the well hogs prophylactic treatment. The man drove sixteen miles in the country, administered the serum, and the cost to the farmer was just the cost of the serum, not exceeding fifty cents per hog. A few weeks later I had occasion to treat a young man in the town of Clinton through a severe attack of typhoid fever—an especially sad case. His father died of tuberculosis. He was the oldest son and chief support of his widowed mother. A brother was helpless at the time as result of a broken leg. Several of the family were exposed, and being of tubercular disposition made prophylaxis doubly important. I therefore appealed to our county board of health and on to the State Board of Health for at least free typhobacterin. I was told sadly that there was no appropriation and that nothing could be done. There was no "Balm in Gilead" for the widow and her children. They might die of typhoid fever. A great State and a rich county were powerless to help them under the present laws.

The State Agricultural Department must by all means spare no amount of money to save a wealthy farmer's fine hogs, but the State Board of Health had no legal right to save the children of a widowed mother. I do not blame the State Agricultural Department. I do not blame the State Board of Health. And in view of what the last Legislature did for us I cannot censure that body. But I do hold that an indifferent, careless, selfish public is responsible for this state of affairs.

How long must it be before people will begin to ask themselves the question, "Is not the life more than meat, and the body than raiment?" Some day we shall teach a new science in our public schools, and in our colleges and universities—the science of humanity as taught by a wandering Teacher of men nineteen hundred years ago.

DISCUSSION.

Dr. I. W. Faison: I want to thank Dr. Cooper for his paper. What he has said is true. When you go out among the people of this State and see what is going on you feel like throwing up your hands in holy horror and leaving.

During the past year I have had the privilege of making talks in three or four little towns. I was up in a mountain town a few weeks ago to make a speech to the civic club. I was introduced by the mayor of that town, who was a graduate of Chapel Hill. I took it for granted that he being a man of education, I would be perfectly free to say anything about the mayor. I happened to ask the crowd if they had whooping cough in the town. Some local physician answered "Yes, a hundred cases." I then opened a battery on them and mowed down everything in sight by saying there was a law sufficient to protect the school children of the State from it and that it was the duty of the mayor to see it; that if he would not take the bull by the horns and protect the town when the time came for the next election they should put in a new mayor. At the close of the meeting I was told that the mayor had forced the health authorities and the school authorities to take his child, who had whooping cough, back into the school.

That is what is going on in our State. That is why I take the position that we have to have laws for these things. All this talking about education is very pretty, but it is not worth a whit without something behind it.

Dr. John A. Ferrell: Many years have rolled by since the Charlotte gentleman lived in Sampson County. He has not kept himself posted on the remarkable progress that has been made in the county of his nativity, otherwise he would not have made the statements concerning the educational and health work there. I would like to inform him that Sampson has provided more with which to pay its health officer than has Mecklenburg County. It may have paid only eight or ten dollars per month in the past, but it is now asking Dr. Cooper to serve at $2,000 a year, and if that is not enough to secure him more will be paid.

The educational work looking to this step has been going on for years under the able direction of Mr. L. L. Matthews, county superintendent of schools, and Dr. G. M. Cooper, the tactful and effective county superintendent of health.

The remarkable ability of Dr. Cooper is evidenced by the fact that a Republican board of commissioners and a Democratic board of education have met on common ground. Each board has appropriated money for the express purpose of employing Dr. Cooper for his entire time. With the splendid progress that has been made in Sampson County in school work, in health work, in the culture and refinement of its people, in farming, in road building, I venture the assertion that my good friend would not now recognize it as the section he left.

A NEWLY DEVELOPED INFLUENCE OF LOCAL HEALTH POLITICS UPON STATEWIDE DEVELOPMENT OF PUBLIC HEALTH AND STATEWIDE REDUCTION OF DEATH RATES.

CHARLES WARDELL STILES, LL.D., CITIZEN OF NORTH CAROLINA.

The present paper does not deal with the *origin* of certain facts, but taking the facts as existing, it invites attention to an interesting result. It is written not in my capacity as a Federal officer, but as a resident of the State of North Carolina.

Several cities and counties in this State have awakened, with commendable energy, to the fact that their death rates have been unnecessarily high and there has developed a desire among many of their citizens to do all within their power to protect human life within the city or county borders. Movements to this end have been instituted, but harmony has not been prominently present either in the local governing bodies or among the citizens; in fact a condition has arisen that might be referred to as local health politics and much energy that might well have been directed toward reducing the death rate of the women and children of the locality has been wasted in factional squabbles, personal invective, and nursing sore feelings.

It is not my purpose to enter into any discussion of the merits or demerits in the premises, for as a Federal officer I must carefully avoid even the appearance of attempting to influence local elections or of taking sides in local factional differences of opinion. But I am persuaded that you will not deny me the right and the duty as a legal resident of this State to defend the good name of the State when I find this in jeopardy in respect to any particular point.

Several years ago Durham elected a certain man as health officer. This official started in to clean up the city—and any of us who had been there certainly knew that this task was of sufficient magnitude to occupy his entire time for some weeks and that it was sufficiently important to justify his being left free to do that work rather than to use his time in building political fences—so to speak. You all know what happened: Dr. Mann's life was almost a burden because of the constant fight that was made against him in his efforts to decrease the daily diet of human excreta consumed by his fellow citizens, and he served but a relatively short time as Durham's health officer.

Not long ago, also, Wake County endeavored to appoint a health officer who should do what he could to protect the lives of the women and chil-

dren against disease. You recall the general history of the incident. A self-governing county proved itself unable to govern itself in this particular incident, and in accord with the law a State official had to step in and settle certain local questions.

About two years ago Wilmington elected a health officer and one might almost say that ever since then fighting for or against him has been the chief occupation of a goodly number of the residents of that city. Recently New Hanover County has elected this same man, Dr. Nesbitt, as full time county health officer, and since his recent election arguments for or against Nesbitt have certainly been the chief topic of conversation in that locality.

Permit me to emphasize the point, gentlemen, that I am not taking sides in the question whether or not Mann, McCullers, or Nesbitt, are individually or collectively knaves, asses, incompetents, or great men. I am placing before you the fact that they were elected in accordance with law to fulfill certain duties as health officers and that much of their time that rightly belonged to the protection of the lives of the women and children of their respective localities has been used, by force of circumstances, to answering objections, criticisms, and attack. If you have these two points clearly in your mind, permit me to pass to the next thought in my paper.

About two weeks ago I received from one of the best known men in this State—not a physician, by the way, a letter in which he told me that the city in which he lived was thinking of putting in a full time health officer and he asked whether I could recommend a man for the place. I replied immediately to the general effect that at the moment I had no one especially in mind, but I would think over the matter, that in a few days I would be in Washington, D. C., and New York, and coming in contact with other men interested in public health matters I would see who was available and would write him later.

Upon my taking up the subject with a number of men, this is the reply I received, in substance:

"In view of the treatment North Carolina gives to any local health officer who tries to do his duty, as indicated by the treatment accorded to Mann by Durham, to McCullers by Wake County, and to Nesbitt by Wilmington, we do not care to advise any men to take a position as local health officer in that State."

Thus, gentlemen, you see that the treatment accorded to health officers in this State is becoming a matter of comment, and that factional differences in three counties are giving to the State at large a dark black-and-blue spot surrounding the eye.

In reflecting over the situation the following thoughts force themselves forward in my mind:

If any city or county hopes to have a health officer who is thoroughly acceptable to every lawyer, preacher, physician, grocer, banker, property owner, real estate agent, and in addition to every ownerless dog in town, that city will either be so clean that there will be nothing for the health officer to do, or it will be a city whose inhabitants are a mass of consummate idiots. Ergo, there will always be differences of opinion in any earthly city, whose inhabitants are rational mortals, in regard to the principles, policies, and personality of any health officer who is worth the price of a haircut.

Going out from this premise, it is clear that if there is only one government in a city, both sides to the controversy can not have their own way as to whether Dr. Tweedledee or Dr. Tweedledum is elected. Assuming now that Dr. Tweedledee receives 50.1 per cent of the votes and Dr. Tweedledum receives 49.9 per cent, or assuming that the vote stands 50.1 per cent for Dr. Tweedledee and 49.9 per cent against him, the point arises, What should the 49.9 per cent—the minority—do? Should they continue the preëlection fight until they wear out the health of Dr. Tweedledee and the patience of his supporters, or should they accept the American principle that the majority rules?

To my mind the answer to the question depends entirely upon the answer to another question, namely, In this matter, is their chief concern a desire to conserve human life—especially the lives of our North Carolina women and children—and a desire not to bring the name of our State into disrepute, or are their personal, political or professional preferences of greater importance than the health and lives of their wives and children? In other words, which would they prefer to bury, their personal preferences or their wives and children? To reduce the subject to this question may sound harsh, but it is thoroughly logical and thoroughly kind, on this account: Every hour of a health officer's time and every particle of his mental and physical strength that are taken away from his legitimate duties as health officer and turned to public health politics means robbing the women and children of a community of that much protection to their health and life, and *who knows* whether it may not be exactly that distraction of the health officer that may cause or permit an unsanitary condition to continue that will result in the death of your wife or my wife or child?

Gentlemen, as a legal resident and as an actual resident of this State, I call upon you as American men, men to whom the lives of women and children are dearer than the lives of self, let us have an end to public

health politics; let us recognize that the majority, not the minority, rules; let us help rather than impede the work of the health officer, whether he be Tweedledee or Tweedledum, and even if he be our bitterest personal enemy and, in our opinion, a scoundrel—for who would refuse to pull an oar in a boat even with a murderer if that boat were trying to make for a woman or child sinking in midstream? Gentlemen, a health officer who differs with us in principle, practice and politics, can save more human life with our aid than without it, and if he is the legally elected health officer it is our duty in justice to our families to support him and to work with him. The man or the organization who or which opposes the work of any health officer in this State, for any reason whatsoever, is doing an injustice to your wife and to my wife, to your daughter and to my daughter, and if (by reason of distracting the attention of any legally elected health officer, be that health officer knave, ass, incompetent, or phenomenon) your wife or my wife, your child or my child contracts typhoid fever or some other infectious disease and dies as a result, the man or the organization that caused the distraction, which was responsible for the occurrence, will be morally responsible for the death that results.

Further, the men or the organization who continue the preëlection duties beyond the election day are assuming the tremendous responsibility of warning away from North Carolina well trained health officers, in face of the fact that the supply is not equal to the demand.

In the name of all of the sick of the State of North Carolina, let us have an end to discord; let us all shake hands, kiss and make up, pull together and coöperate, bury our differences of opinion instead of our children, and protect the good name of the State from further reflections such as I have brought to your attention.

Durham, Raleigh, and Wilmington public health squabbles have assumed more than a local aspect and if such things go on much longer they will not only result in keeping the better class of men out of public health work, but will be a great impediment to a Statewide reduction of the death rate.

In the name of Dr. Rankin's vital statistics, Dr. Ferrell's hookworms, and Dr. Booker's flies, let us get together and have harmony.

DISCUSSION.

Dr. Arch. Cheatham: I wish to say in behalf of Durham that I think Dr. Stiles' criticism is unjust. I want it understood that Dr. Mann and myself have always been friends. There are always two sides to every question, and only one side of this question has gone

out, to the detriment of my town and county. Politics was not the cause of Dr. Mann's not being retained. Dr. Mann is a man well up in sanitary science, but he is not an effective man. He was not in the habit of pushing his ideas after they were promulgated, but he let them take care of themselves. The board of health, composed of honorable gentlemen who had given great study to the question of public health, finally decided that they would rather have a man who would act as well as talk, and Dr. Mann was not reëlected to fill the position which he had been filling for years. As to whether they were right or wrong, they were on the ground and they were above reproach. This question has gone out in a shape which is a reflection on my town and which I resent. It is unjust. I can not say that we were active for two or three years after Dr. Mann's withdrawal or failure to be elected in our town. I did all I could to hold up his hand and the rest did what they could. I can give the details if any one wishes to go into the matter. There is no politics in our town in the way of health administration. I am the unfortunate victim of a recent election and I hope to try to do something to remove that stigma upon my town and State.

On motion of Dr. Chas. O'H. Laughinghouse the President appointed as members of the Nominating Committee, Dr. John A. Ferrell, Raleigh, N. C.; Dr. D. A. Stanton, High Point, N. C.; Dr. L. B. McBrayer, Asheville, N. C.

Meeting adjourned.

NIGHT SESSION

THE INDICATIONS FOR COMBINING MUNICIPAL AND COUNTY HEALTH WORK.

J. T. J. Battle, M.D., Greensboro, N. C.

The indications for combining municipal and county health work are, upon investigation, quite reasonable and urgent. It has been well said by Emerson that "Any great institution is the lengthened shadow of one man." The greater opportunity which is afforded a man the greater work he can accomplish. The combined work of town and county is an enlarged opportunity over either alone. As the municipal and rural citizens are in constant communication with each other and the one dependent upon the other, so much so that their welfare could be managed along the same lines, a plan of mutual efficacy to each could

be mapped out and with one in control could be executed to the advantage of both.

If any contagious disease should appear in either place it could be better controlled if all the machinery were centered in one officer. If each county in the State were properly organized with a competent superintendent of health and these directed by our able and most efficient Secretary of the State Board of Health, we could in two or three years greatly reduce our present rate of mortality. The average mortality of Ohio, Pennsylvania, New York, New Jersey, Michigan, and Indiana is 14.4 per thousand. North Carolina should most assuredly equal either of these, yet ours is 18.7, making a difference against us of 4.3. With the State's population of 2,206,000 this excess death rate causes a loss of 9,030 lives annually. Looking at this from a financial viewpoint and taking $1,700 as the value of an average life, and multiplying by the 9,030, it figures out the enormous sum of $15,300,000 loss in money value each year. With the hundred counties in the State, if $1,500 were added to what is already being paid out for professional services in each county, equaling $150,000 for the entire number, there is no question but that the above estimated saving could be realized. For every dollar expended that would mean a saving of one hundred dollars, besides the 40,000 cases of needless sickness each year. There is no better work, nor greater than conserving health and preventing premature death from both an humanitarian and a financial viewpoint.

Again, the State's population is increasing at the rate of only 31,247 per year. With these 9,030 people saved it would add twenty-nine per cent to the increase.

There is only one way to stop this drain upon the State's vitality and that is to have a superintendent of health in each county. In having only one instead of two, one hundred high priced men's salaries could be saved and one hundred would harmonize better than two hundred. Dividing responsibility oftentimes lessens efficiency. If the sanitary work in the Panama Canal Zone had been divided between two or more men it is safe to say that the time for the ships to pass through would be delayed months, or even years. But with a Gorgas in control the result has been marvelous, and would that every county commissioner in North Carolina could visit that Zone and try to comprehend what can be done by sanitation and realize that in their hands rests the opportunity to save 9,030 lives and over $15,000,000 to the State annually.

And if our people must be better educated to comprehend this work of so great and vital interest to each citizen, and with demonstrations on

every hand and every turn that with improvement of sanitation, *pari passu* lessened death rate, it does seem that our leaders and law makers would pass a compulsory education law instead of attempting to ride into popularity for another election by straddling a makeshift.

May the day be hastened when each county will have a superintendent of health and then will the State begin another era of prosperity, for an investment in health will net an hundredfold return.

DISCUSSION.

Dr. J. M. Parrott: I don't suppose that there is a man present who does not realize the very great importance of health work in North Carolina and I am sure that the people of North Carolina as a whole are beginning to realize the true worth of the work that has been done in the past. I am very much struck with the idea of Dr. Battle of the combination of the county and municipal health officers in the hands of one man. I don't believe that there is a county in North Carolina so densely populated that would require the exclusive time of two men. There is no doubt that concentration of authority brings with it the responsibility needed for success. The people of North Carolina have placed the board of health as our representatives in this work, on trial. They are looking to see what will be accomplished. I am very much of the opinion that if we fail to show results from all this expenditure of money and of work incident to this campaign that the people of North Carolina will not do away with health work, but will have it done in spite of us. They have placed the ammunition in our hands, they are assisting us, and unless we move forward and obtain results, we need not be surprised if the people take this matter into their own hands and literally run over the profession in this matter.

Now as to increase of saving life; the work does not mean really any more by the actual saving of life as the increase of the efficiency of the living man; not so much in saving the boy as increasing the efficiency of that boy. I believe the correct course to pursue is outlined by Dr. Battle in his paper.

FUNDAMENTAL DUTIES OF THE MUNICIPAL AND COUNTY HEALTH OFFICER.

CHAS. O'H. LAUGHINGHOUSE, M.D., GREENVILLE, N. C.

The problem of the cost of living is so complex that an attempt to solve it would lead one into a study of all phases of life, but the deeper we delve into the solution of the question, the stronger is the conviction that normal and economical living depend principally upon the physical, mental, and moral efficiency of the individual who lives.

Of the deaths each year 43% might be postponed, 50% of serious illness might be obviated. The average human life might be prolonged over twelve years; 4% of the citizenship of the United States are on the sick list constantly. From a standpoint of money the State suffers annually more than $10 per capita, without counting the economic loss of 12.3 years that might be added to the average life.

The increased vital efficiency of the citizens of the State which would result from a conservation of the present waste of health would, if expended in labor, increase the earnings of those whose health is impaired; lessen the burden of those who are at present unnecessarily ill, and in direct ratio relieve the purse and time of those who are well but burdened with some dependent, made so by disease.

There may be no relation between waste of health and rise in prices, nor is there evidence that waste of health lowers the rate of wages, but it is beyond controversy that sickness, oft repeated and of long standing, lowers personal efficiency, which sooner or later means deterioration in earning capacity; therefore one of the fundamental duties of a municipal and county health officer is to reduce to the minimum this phase of the cost of living.

No business, great or small, can grow satisfactorily unless it submits itself to inventories and audits. In no other way can its assets and liabilities be obtained; in no other way can its strong and weak points be discovered; in no other way can leaks be stopped. In fact bookkeeping, inventories and audits are nothing more or less than the foundation on which business efficiency is built.

Our last Legislature enacted a vital statistics law, which requires the registration of births and deaths, along with age, sex, place, cause of death, etc. Under this law we will know where, when and how people die. It is the State's plan of inventory, the State's plan of audit, the State's system of bookkeeping in its health department. It is the yardstick by which the health officer and his work are measured. It

is the gantlet that not only the health officer but his community must run.

A knowledge of the death rate of any given community can now be had for the asking; and unless the death rate is lessened in a given community it is *prima facia* evidence of incompetence on the part of the health officer. The State is now in a position to and will compare each community, one with the other; therefore health officers should put forward every effort to make thorough knowledge and familiarity with the State's vital statistics law common property to all citizens of the State. It is the only safe way to guide public health officers. It is to public health what bookkeeping is to business. The wise merchant studies his records of profit and loss and expands along the lines where he can get the best interest on the capital invested. So with the modern health officer. The various causes of death and inroads of disease in his territory indicate the end to which he should direct his efforts. His own experience and the experience of others, as tabulated by vital statistics, tell him which phalanx of the enemy can be most profitably attacked. For example, there were 732,538 deaths in the registration area of the United States for 1909; 558,068, or 76% of the whole, were due to only eleven causes; 314,359 were due to typhoid fever, diphtheria and other epidemic diseases, tuberculosis, pneumonia and other respiratory diseases, diarrhea of infants, and accidents—all of which are preventable.

The importance of vital statistics can not be more promptly disseminated than by calling on the medical profession as a whole to aid in making known the purpose of the law, its intent and what it hopes to attain. A knowledge of the when and where and the wherefore of disease is essential to all public health work.

The primary factor in procuring morbidity reports is in the practicing physician who comes in direct contact with disease. Upon him rests the responsibility of giving correct information to the local health officer; he is therefore of fundamental importance in collecting vital statistics data. He is the sanitary outpost and it is only through his report of cases and conditions that information can be had. No health officer can be of proper service to vital statistics, nor can he inaugurate proper measures for the protection of his community, in the absence of such notification from the individual physician. Therefore another of the fundamental duties of the health officer is to bring, not only the public in his community, but physicians as well, to a proper realization of their personal, practical, daily duty to public health.

Physicians ofttimes appear to hold lightly their responsibility in re-

porting cases which they should report; due, no doubt, to lack of appreciation of the importance of and necessity for such notification. After having had the question emphasized and explained by the local health officer no physician is a good citizen who persists in neglecting this duty to his community, to his State, and to his profession. Inasmuch as he does not do his part—and his part, by the way, is a part that no one else save himself can do—he stands convicted of not being interested in his community's welfare nor in the prevention of disease. With the great interest that has been shown in public health in recent years, any lack of coöperation on the part of the practicing physician should be a thing of the past, and I believe it will be, when local health officers give this important and fundamental question the attention it should rightfully have.

The crowning purpose of the local health officer is to promote physical efficiency and prevent death and disease in a manner that requires the smallest possible expenditure of the public's convenience, time, and money. The ways and means of accomplishing this are so devious, and the points of attack are so numerous, that thorough knowledge of public health weapons and what is most necessary to attack, is one of the fundamental properties of a health officer.

Let this knowledge be broad enough and deep enough to force you to convince the public that it is time to break away from the bondage of former precedence and wage war against inefficiency, disease and death with modern business sagacity and economy. A tendency of the times is not only to belittle the past attainments of medical men as health officers, but to discount their ability to cope with the complex problems of today and the future. The sociologists, biologists, and engineers who are disseminating these ideas seem to have forgotten that the advance in sanitation and hygiene have come through physicians, and generally through those in charge of health work; and that progress has been in spite of politics, general ignorance, and public apathy. We hear daily of the wonderful achievements in digging the Panama Canal. After the French engineers had failed because of their lack of sanitary knowledge a physician came along and made possible this the greatest engineering feat of history. It was the physician who changed Panama from a pesthouse of disease to a "garden of prosperity and health," and without the physician neither the project nor the place would have been perfected.

Medical men, therefore, should look to their laurels and see to it that only capable doctors are health officers. Intelligent, honest, fearless physicians with a broad social outlook, with an energizing and organ-

izing force that can bring humanity to such thorough appreciation of the value of preventive medicine that the health officer will be looked upon as an essential business proposition, more so, even, than life and fire insurance presidents. Such physicians are the only kind of men that can fill adequately the place of health officers. The job is too big for weaklings, and I long to see the day when public opinion says they need not apply. Your teaching, your efficiency, your realizing and doing the things that make perfection in the administration of North Carolina's department of public health, will not only make the State's department or mar it, but it will influence your own community as well.

Another necessary departure from this bondage of precedence is a relegation to a position of obscurity, most, if not all, of the time honored duties of the local health officer and replacing them by undertakings worth while. For example, the average citizen believes that the chief function of the health officer is to keep the neighbor's back yard clean, to inspect plumbing, and to disinfect after contagious disease, when actually these are duties of minor importance.

The only important relation of garbage to disease lies in the fact that it breeds mosquitoes and flies. So leave the garbage to the civic leagues and others who are following the "city beautiful" flag: as soon as you can bring them to a proper realization of their duties to public health. From the pathogenic theory dates the fear that miasma may emanate from a pinhole in a sewage pipe and fly here and there to seize upon helpless victims. Bacteriological studies now show that if a man places his mouth at the top of a house drain and breathes drain or sewer air for twenty-four hours he would have less danger of acquiring disease than if he had drunk a quart of untreated water from a polluted stream. Leave all this to the plumbers, whose prices, by the way, are more likely to bring famine than are the holes they stop to bring pestilence or plague. Sewage treatment and sewage treatment only is the thing to be desired, and that only in so far as it affects the pollution of streams from which we procure our drinking water.

Again it is a recognized fact that communicable diseases do not arise from decomposing organic matter, but from the excreta of infected persons; so relegate to the past general room disinfection by the burning of sulphur and formaldehyde gas. It is all useless and the public should know that such waste of time and money are simply as "incense burned to the memory of bygone theories of disease." It is a fact that disease germs are, for the most part, if not entirely, carried from gross particles of excreted material from the human body, hence there has arisen a new conception of disinfection. It is now a personal proposition and is

useless—beyond efforts—to disinfect the patient, his clothes, his bedclothes and his excreta. Take the money that has been spent for disinfectants and buy lumber and plans to construct sanitary privies and you will have given the strongest blow to the eradication of disease.

Quarantine, as it is now practiced, is a farce. There is no quarantine that is not backed up by public sentiment. Let's break away from this superannuated precedent and evolve a quarantine that comes through a familiarity of the public with the process of contagion sufficient to make the individual, or the family, voluntarily isolate contagious disease. Successful and practical quarantine means personal isolation, nothing more.

There are institutions in the various counties of the State known as county jails, convict camps, and county homes. These places hold the neighborhood's "ne'er do wells"—those whose avocation is crime and whose vocation is hoboism. There are a few deserving paupers, no doubt, but as a whole they are made up of the seniles of society, the feeble minded freaks, the erstwhile "peaches" of prostitution, the recruits from the army of alcoholics, the victims of venery, the flotsam and jetsam on humanity's sea.

Are they, or can they be made an asset to the State? I answer, "No." Can death be prevented or life be prolonged among this class? I answer, "No." If I am incorrect let me ask, in the event it can be done, what's the use? Yet in most of the counties of the State the care of criminals and paupers is the paramount duty of the superintendent of health. Let's break away from this precedent. House them, feed them, clothe them, amuse them adequately and well, weep over them—if you will—pity them as much as you care to, but employ the time of a county health officer in a more profitable way. A doctor can do nothing for this class of humanity but give them pills for purges, morphine for misery, and laudanum for laziness. They don't need a doctor; they need a nurse. Give them what they need; let them go and turn your attention to the medical inspection of schools and take the fifty per cent of children with defective teeth; and twenty-five per cent with hookworms; and the twenty per cent with defective eyes; and the twenty per cent with enlarged tonsils; and the 10 per cent with adenoids; and the five per cent with defective ears; and the two per cent with feeble mindedness, and put them in position to correct these deficiencies wherever and whenever it is possible. Where a State—for its own protection—compels a child to go to school it pledges itself not to injure itself by injuring the child, and in neglecting the medical inspection of schools you are feeding the mill that makes pauperism and crime, besides

we are spending in the public schools of North Carolina each year more than *five millions of dollars* to educate the State's children—fifty per cent of which are failing to get what the State would give because of physical defects that could be remedied, largely. Waste, woeful, shameless waste: waste of money, manhood, womanhood; waste of happiness, intelligence, morality; waste of efficiency and that which efficiency, intelligence and morality brings; simply because we, as health officers and physicians, are not bringing the people to a realization of their children's needs.

We have the knowledge to realize and take up the tasks of preventive medicine, the opportunity is ours, it is here, it is now. If we but supply the necessary information and energy public health work, in its broadest and truest scope, will go forward by leaps and bounds; there will grow out of it a higher sense of public duty, a more ideal, unselfish, and productive citizenship that will more fully realize its deep obligation to the medical profession; and in this mutuality of confidence and regard the medical profession will take a new and grander place in the community and the community and the profession will receive rewards of which neither has ever dreamed.

Presentation of Cane to Dr. R. H. Lewis

Dr. G. G. Thomas:

Mr. President, and Gentlemen of the Association of County Health Officers:

It is a moment of great embarrassment, but one of still greater pleasure, in which I have acceded to the request of your President to give to Dr. Richard H. Lewis this testimonial from this body.

Early in the evening I was warned that Dr. Lewis would be made recipient of this token of your regard and in all loyalty to him I took him off in a corner and told him to get ready for some such event. I was doing this out of the kindness due my friend, and I walked into the hall to hear the presentation ceremonies, and to my surprise I was asked to be the speaker on this occasion. It is, therefore, in the midst of my embarrassment a great pleasure to feel that you committed to me this expression of the fact that the health officers of North Carolina admire, respect and love Dr. Lewis, and they are manifesting this by this material evidence of their regard. It does not mean in its suggestion that it is a period or a full stop in his great work for public health, but

only a comma, if I may follow out the figure—a short halt for this refreshing exercise, in which to say to him how great has been his work, and how thorough is our appreciation of it. What can I say to you, Dr. Lewis? As long as you live, Doctor, and afterwards for generations longer that we dream of, the history of your work in sanitation in North Carolina will be known to all men and be deservedly prominent. It is difficult for me to say all that wells up in my heart now and do justice to you and your great record, and, therefore, I feel that I can not better speak for these, your friends, than to follow out the course of your whole life as I have known it and to say very simple things. There never has been a time since I have known you when you were not true to the best instincts of boyhood and manhood, and since you have reached manhood you have been always a useful citizen. No doubt has ever been cast upon your motives or measures by the public men to whom you appealed for help. You have never made a statement that you could not easily and promptly prove. All of this is the result of honest, earnest endeavor and simplicity of life and speech, and, therefore, now as simply as I can say it, I wish to say for your friends here, many of whom will live longer than you or I, that this cane which I am presenting to you is a manifestation always of their and my affection, undoubted confidence and respect for you. It is not intended to be a support for you, doctor, but a shepherd's crook. Take it and continue to guide these, your friends, and matters of health in the State as you always have and as long as you live. And may God bless you!

Dr. R. H. Lewis: *Mr. President and Gentlemen*—I am sorry I did not understand the full meaning of Dr. Thomas' remark—that something was going to be done to me, and I have not prepared anything at all to say, but I do wish to say that my heart is full of gratitude for this evidence of your affection. It has been a great pleasure to me as far as lay within my power to advance the welfare of the people in North Carolina along the lines of public health, and I can assure you that this evidence of appreciation is one of the most gratifying experiences of my life. I won't admit that I am a very old man, but I am getting on in years, and when you arrive at that stage you will realize more than now the meaning of evidence of affection, especially from those younger than yourself. I wish to express my appreciation to my dear friend, Dr. Thomas, of the handsome presentation. He speaks from his heart, I am sure, and therefore with partiality. I really can not tell you how deeply touched I am and I shall take this evidence of your affection home with me and preserve it and transmit to those who follow after me

as one of the most precious heirlooms to be found in my family. I thank you, gentlemen, from my heart.

Dr. Wm. M. Jones: I would like to make a motion that we extend vote of thanks to the Medical Society of North Carolina for the publication of the Transactions of the Health Officers of North Carolina in their last year's Transactions, and that it may be continued for the next ensuing year.

Motion was seconded and passed and a vote of thanks is extended the North Carolina Medical Society for induding our Transactions in theiir volume.

Report of Nominating Committee:

For President, Dr. G. M. Cooper, of Clinton.

For Vice-President, Dr. William M. Jones, of Greensboro.

For Secretary and Treasurer, Dr. W. S. Rankin, of Raleigh.

The above report adopted.

Dr. G. M. Cooper's speech of acceptance:

Gentlemen, I sincerely appreciate this honor you have conferred upon me. I have made no scramble for it, and therefore appreciate it all the more. I feel the responsibility involved in this office, which I have realized a good while—I have known the advancements which are surely coming—that if the physicians in this State do not go forward the people are coming right on over us. I have had that occur to me on two or three occasions in the last two or three months. I think the most important thing for this association and for the physicians of North Carolina to work upon is child life. About fifteen years ago, with all due respect to Dr. I. W. Faison, I had the distinguished honor of being a school teacher of Sampson County. I remember the first books of hygiene they put in the schools of North Carolina. I remember ten years later they held an election for prohibition and the result was a majority for prohibition. I think the thing to work upon is child life.

I have prepared no speech of acceptance, but I wish to tender my sincere and deep appreciation for this honor. I can do nothing by myself, but I shall hope to have the coöperation of every health officer in North Carolina.

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